World Family Medicine Journal
incorporating the Middle East Journal of Family Medicine

ISSN 1839-0188

July 2019 - Volume 17, Issue 7

Communication Skills of Physicians during Consultation in Out-Patient Settings at a Tertiary Hospital in Nepal

..... page 28

From the Editor

Chief Editor:
A. Abyad
MD, MPH, AGSF, AFCHSE
Email::
aabyad@cyberia.net.lb
Ethics Editor and Publisher
Lesley Pocock
medi+WORLD International
AUSTRALIA
Email:
lesleypocock@mediworld.com.au
publishermwi@gmail.com

In this issue various papers from the Region and from Nepal discussed pertinent issues to primary health care. A retrospective, non-controlled, observational study was conducted in the Princess Haya Military Hospital, Royal Medical Services of Jordan between August 2018 and April 2019. The objective of the study was to assess the incidence of posterior capsule rupture, the visual outcome, and complications associated with clear corneal phacoemulsification surgery under topical anesthesia and intracameral lidocaine. Four hundreds files of patients who underwent clear corneal phacoemulsification surgery under topical anesthesia and intracameral lidocaine during the study period were considered for the research. 216 (54%) patients were males and 184 (46%) patients were females. Three eyes of three patients (0.75%) developed ruptured posterior capsule. The average unaided and best corrected visual acuity in decimal significantly improved ($p < 0.01$). Only Thirty-three (8.25%) patients developed minor complications. The authors concluded that Phacoemulsification surgery under topical anesthesia and intracameral lidocaine is a safe procedure and is not associated with sight-threatening complications, it does not increase the risk of posterior capsule rupture, and significantly improves the unaided and best corrected visual acuity.

In Abu Dhabi a descriptive cross-sectional study was conducted during 2016–2017 using a self-administered questionnaire. The study targeted both UAE nationals and non-nationals attending seven clinics that are located in the Abu Dhabi region. The study aimed to assess the knowledge, attitudes, and practice of CAM among people living in the Abu Dhabi region. Most of the participants were UAE nationals (75%). Thirty-seven percent of the respondents reported that to have chronic disease. The proportions of respondents who had good, fair, and poor knowledge were 28.4%, 68.6%, and 3%, respectively. Higher education was associated with better knowledge ($P = 0.044$). The sources of CAM knowledge differed according to certain population characteristics. Educated people used the internet as a source of knowledge, whereas patients with chronic diseases obtained their knowledge primarily from health care providers ($P = 0.02$, 0.039, respectively). Ninety-five percent of the study group used CAM. The most common practices involved the use of herbs (53.6%), dietary supplements (44.7%), and honey products; the least common practices were chiropractice (9.9%) and cautery (8.6%). The authors concluded that the use of CAM is increasing in Abu Dhabi region. The results showed fair knowledge in most of the participants, and neutral attitudes toward CAM. Most of our respondents did not discuss CAM with their primary physicians; however, 80% preferred discussing it with their doctors. The most common practices were the use of herbs, dietary supplements, and honey products. Primary care physicians need to raise awareness about the benefits and risks of CAM use among the population, which can be achieved by patient education regarding evidence-based CAM practices.

A paper from Nepal assessed the communication practice of physicians when interacting with patients. A total of 169 interactions were observed. Mean total score of observed behavior of communication skill and practice ranged from poor to satisfactory across category and showed statistically significant variations. The ANOVA test between groups is strongly significant ($p=0.000$). More than three-forth (78.11%) have given insufficient time (less than 6 minutes) for consultation. Average interaction time was 5.26 (SD 2.31) minutes. The mean consultation time of Interns & Medical Officers is least (4.36; SD 1.79). Almost half seniors, one third juniors and 5.8% Interns & Medical Officers have given sufficient time for consultation. The study has revealed that history taking skill and practice is dearth mainly lower level physicians (medical officers/Interns and Junior faculties). The consultation time given by physicians was also insufficient. Thus, hospital authorities should give attention to improve communication skills of physicians.

A paper from Iraq look at a novel case series of Munchausen Syndrome by Proxy Victim. A 35 years old lady, a mother of two daughters (married 18 years old and 3 years old) and a son of (17) years. She was known to have social and marital problems and diagnosed as case of depression and on multiple antidepressants and attempted suicide for several times. She is using her 6-year-old daughter and her 3-year-grandson for visiting doctors 4-5 times a week. The reasons for doctor visiting are different like urinary tract infection, otitis media, gastroenteritis, respiratory infections, different kinds of traumas and etc. The authors concluded that Munchausen syndrome by proxy is a complex type of abuse, usually misdiagnosed and under-diagnosed, and its sequelae have a significant impact.

Helvaci MR et al tried to understand the safest value of plasma triglycerides according to the some components of the metabolic syndrome. They studied 457 cases (266 females and 191 males), totally. The mean ages of the groups, body mass index (BMI), and low density lipoproteins increased just up to the plasma triglycerides value of 200 mg/dL, significantly ($p<0.05$ for all). On the other hand, the mean fasting plasma glucose and prevalence of smoking, white coat hypertension, hypertension, diabetes mellitus, and chronic obstructive pulmonary disease increased parallel to the plasma triglycerides values from the first towards the fourth groups, gradually. The authors concluded that plasma triglycerides may actually be some acute phase reactants indicating disseminated endothelial damage, inflammation, fibrosis, and accelerated atherosclerosis with eventual end-organ insufficiencies all over the body. There may be highly significant relationships between plasma triglycerides values and aging, BMI, and smoking. Interestingly, the greatest number of deteriorations of the components of the metabolic syndrome was observed just above the plasma triglycerides value of 100 mg/dL.

p-ISSN: 1839-0188; e-ISSN : 1839-0196
http://www.mejfm.com
http://www.worldfamilymedicine.com

Editorial Board
http://www.mejfm.com/editorial_board.htm
Author Information:
http://www.mejfm.com/author_info.htm
Publishers
Lesley Pocock
medi+WORLD International
Australia

Table of Contents

Clear corneal Phacoemulsification surgery under topical anesthesia and intracameral Lidocaine at the Royal Medical Services of Jordan

Rania Zaid Rawashdeh
Ibrahim Mohammad Kilany
Rania Abdelkader Alrawashdeh

Ophthalmology Department, Royal Medical Services of Jordan

Correspondence:
Dr. Rania Zaid Rawashdeh
Ophthalmology Department, Royal Medical Services of Jordan
Jordan
Phone: 00962777937580
Email: rz_rawashdeh@yahoo.com

Received: May 2019; Accepted: June 2019; Published: July 1, 2019.
Citation: Rania Zaid Rawashdeh, Ibrahim Mohammad Kilany, Rania Abdelkader Alrawashdeh. Clear corneal Phacoemulsification surgery under topical anesthesia and intracameral Lidocaine at the Royal Medical Services of Jordan. World Family Medicine. 2019; 17(7): 4-7. DOI: 10.5742MEWFM.2019.93661

Abstract

Objectives: to assess the incidence of posterior capsule rupture, the visual outcome, and complications associated with clear corneal phacoemulsification surgery under topical anesthesia and intracameral lidocaine at the Royal Medical Services of Jordan.

Method: This retrospective, non-controlled, observational study was conducted in the Princess Haya Military Hospital, Royal Medical Services of Jordan between August 2018 and April 2019. Files of patients who underwent clear corneal phacoemulsification surgery under topical anesthesia and intracameral lidocaine during the study period, were considered for the research. The inclusion criteria were patients aged above 40 years with visually significant cataract and normal posterior segment examination. The exclusion criteria were patients who had incomplete data, ocular disease apart from cataract, or previous surgery in the operated eye, and combined surgery. The follow-up period was two months.

Results: The files of 400 patients were reviewed, and the complete data of 400 eyes which underwent clear corneal phacoemulsification under topical anesthesia and intracameral lidocaine were enrolled in the study. 216 (54%) patients were males and 184 (46%) patients were females. Three eyes of three patients (0.75%) developed ruptured posterior capsule. The average unaided and best corrected visual acuity in decimals significantly improved ($p < 0.01$). Only thirty-three (8.25%) patients developed minor complications.

Conclusion: Phacoemulsification surgery under topical anesthesia and intracameral lidocaine is a safe procedure and is not associated with sight-threatening complications; it does not increase the risk of posterior capsule rupture and significantly improves the unaided and best corrected visual acuity.

Key words: Phacoemulsification,
Topical anesthesia, Tetracaine, Lidocaine,
Posterior capsule.

Introduction

Cataract is the clouding and opacification of the eye lens (1), and it accounts for half of the blindness cases and 33% of visual impairment cases worldwide (2, 3). There are two surgical techniques for cataract removal: intracapsular cataract extraction without intraocular lens implantation and extracapsular cataract extraction with intraocular lens implantation (4)

Phacoemulsification, from Greek "phako" meaning "lens" (5), is a modern type of extracapsular cataract extraction that was invented in 1967 by Dr. Charles Kelman after being inspired by his dentist's ultrasonic probe (6). In phacoemulsification, the internal material of the lens is emulsified, aspirated and foldable intraocular lens is implanted through small corneal incisions.

Phacoemulsification surgery can be accomplished under general anesthesia, regional anesthesia (retrobulbar and peribulbar block), sub-tenon block and topical anesthesia. Under general anesthesia, the patients are subjected to all complications of anesthesia (7). Retrobulbar block was considered the gold standard for years, but it was associated with the risks of scleral perforation, retinal vascular occlusion, optic nerve damage, hematoma, and central nervous system (intrathecal) spread (8). Peribulbar block minimized the incidence of optic nerve damage, hematoma and intrathecal spread, but Peribulbar block and retrobulbar block are blind procedures (9). Despite being a safe procedure, Sub-tenon anesthesia is associated with minor as well as sight-threatening complications such as direct optic nerve damage and globe perforation (10). In contrast, topical anesthesia avoids all the previously mentioned complications (7). The present study was designed to assess the incidence of posterior capsule rupture, the visual outcome, and complications associated with clear corneal phacoemulsification surgery under topical anesthesia and intracameral lidocaine at the Royal Medical Services of Jordan.

Methods

This retrospective, non-controlled, observational study was conducted in the Princess Haya Military Hospital, Royal Medical Services of Jordan between August 2018 and April 2019. Files of patients who underwent clear corneal phacoemulsification surgery under topical anesthesia and intracameral lidocaine during the study period were considered for the research. The inclusion criteria were patients aged above 40 years with visually significant cataract and normal posterior segment examination. The exclusion criteria were patients who had incomplete data, ocular disease apart from cataract or previous surgery in the operated eye, and combined surgery. The IOL Master500 (from Zeiss) was used to calculate the intra ocular lens power. The type of anesthesia was topical tetracaine and intracameral lidocaine without any intravenous sedation. The extracted data included: age, gender, before surgery unaided and best corrected visual acuity, unaided and best corrected visual acuity at one week and one months after surgery, number of cases which developed ruptured posterior capsule during surgeries, need for conversion to another anesthetic technique, and post-surgery complications. The surgeries were done by two surgeons*, who had good experience in phacoemulsification surgery. The follow-up period was two months. Simple statistical analysis was used for analyzing the data.

The study and data collection process complied with the tenets of the Declaration of Helsinki, and the ethical committee of the Royal Medical Services approved the study.

Surgical Technique

The standard protocol followed for such cases in the Princess Haya Military Hospital is as follows:

Three drops of topical anesthesia (Tetracaine 1.0%) are applied to the eye five minutes apart preoperatively. The eye is then scrubbed and draped, and the lid speculum is inserted. One drop of tetracaine is applied just before starting the corneal incisions. Two corneal (temporal and nasal) side ports are made by MVR 19G, and then 0.3 ml of preservative free lidocaine 1% is injected intracamerally through one of the side ports, followed by injection of viscoelastic agents (Healon) in the anterior chamber. A 2.8 mm superior corneal incision is made using Keratome. Manual capsulorhexis is achieved by using capsule forceps. Hydrodissection and hydrodelineation are then followed by phacoemulsification steps which are accomplished by Stellaris phaco machine (Stellaris phaco system from Bausch and Lomb is used in Princess Haya Hospital). Balanced Salt Solution (BSS) is used during the whole phacoemulsification surgery. Bimanual irrigation and aspiration of cortex is followed by injection of Healon; after that foldable silicone intra-ocular lens is implanted in the bag, followed by aspiration of Healon and corneal wound hydration. Then 1.0 ml of a mixture of dexamethasone phosphate (4mg/ml) and gentamycin (40mg/ml) is injected subconjunctivally at the end of surgery. The ruptured posterior capsule is managed by automated anterior vitrectomy using Stellaris phaco machine, and three pieces intraocular lens is implanted in the ciliary sulcus when applicable.

Four hours after the surgery, the eye pads of the patients were removed, and they started using topical antibiotic (ofloxacin 0.3% eye drop) and pred forte (prednisolone acetate 1.0% Eye drop) hourly. On the first day after surgery, the patients were assessed in the clinic, and topical eye drops were tapered to 6-8 times a day. After that, the patients were assessed at one week, one month, and two months after surgery. Fundus fluorescein angiography and optical coherence tomography (OCT) were ordered in selected cases. Ofloxacin and pred forte eye drops were slowly tapered and then discontinued six weeks after the surgery.

In addition to the previously mentioned eye drops, patients who had ruptured posterior capsule used Acular (Ketorolac tromethamine 0.5%, a non-steroidal anti-inflammatory drug) eye drop four times a day for one week; the eye drop was tapered slowly and discontinued one month after the

surgery. During first day after surgery visit, Edenorm 5% (hypertonic lubricant ophthalmic solution) was prescribed for patients who developed corneal edema, for four to six times a day for one week.

Results

The files of 400 patients were reviewed, and the complete data of 400 eyes which underwent clear corneal phacoemulsification under topical anesthesia and intracameral lidocaine were enrolled in the study. 216 (54%) patients were males and 184 (46%) patients were females. The average age of males at the time of surgery was 60.59±9.68 years (range from 43 to 78 years), whereas the average age of females at the time of surgery was 65.22±8.44 years (range from 45 to 79 years). The male to female ratio was 1.17: 1 (Table 1). Three eyes of three patients (0.75%) (one female and two males; female' s age was 64 years while the two males' age was 62 and 68 years) developed ruptured posterior capsule during the irrigation aspiration step of the surgery, without lens matter drop in any of them. All of the three were managed by automated anterior vitrectomy at the same sitting, and three pieces intra ocular lens was inserted in the ciliary sulcus. None of them required suturing for main wound closure or conversion of anesthesia type.

The average unaided visual acuity and the average best corrected visual acuity in decimals before surgery was 0.17. One week after surgery, the average unaided visual acuity was 0.83, and the best corrected visual acuity was 0.9; both were statistically significant (with P value < 0.01 for both, T-test). One month after surgery, the average unaided visual acuity was 0.9, and best corrected visual acuity was 0.93, and both were statistically significant (P value<0.01, T- test), as shown in Table 2.

Thirty-three (8.25%) patients developed complications after phacoemulsification surgery, including 15 (3.75%) males and 18 (4.5%) females. A total of 28 patients (7%; 12 males and 16 females) had corneal edema. The corneal edema was transient, lasting around one week after surgery without serious sequelae (no single case of bullous keratopathy had been reported during the given follow-up period). Three (0.75%) patients (2 males and 1 female), had posterior capsule opacification. Two patients (0.5%; 1 male and 1 female) had inflammatory membrane, which was treated medically by increasing the frequency of prednisolone acetate (1.0%) eye drop to hourly dosage, adding cyclopentolate hydrochloride (1%) eye drop three times a day, and subconjunctival injection of 1.0 ml of (dexamethasone phosphate 4 mg/ml and gentamycin 40 mg/ml) once a day for three days; the condition of both patients improved within one week, and the eye drops were tapered slowly. No patients had dislocated intra-ocular lens, rise of intraocular pressure, retinal detachment, or endophthalmitis. Fundus fluorescein angiography and macular OCT were requested for patients who had ruptured posterior capsule or abnormal macular reflex, and none of them showed clinically significant cystoid macular edema (Table 3).

Discussion

Topical anesthesia is increasingly used in phacoemulsification surgery; however, there are a limited number of comparative studies (11). In 1996, Fichman evaluated pain and discomfort experienced by patients who underwent cataract extraction and found no change in the vital signs during surgery when using topical anesthesia without intravenous sedation (12).

According to the literature, the overall incidence of posterior capsule rupture ranges from 0.45% to 5.2% (13). Surgeon's experience and the presence or absence of risk factors (glaucoma, pseudoexfoliation, etc.) (14) can affect the incidence of posterior capsule rupture. In 2014, a study conducted at a Hawaiian cataract surgical center (15), found that the incidence rate of posterior capsule rupture during phacoemulsification surgery under topical anesthesia was 0.68%. Similarly, a Canadian study found the incidence rate to be 0.5% (16).

Tavares et al. conducted a study in Brazil (11) and reported statistically significant improvement in average visual acuity after phacoemulsification surgery under topical anesthesia. In a study published in the United Kingdom (17), the overall incidence of complications after phacoemulsification surgery was 8.7%, and only 2.4% were major complications. On the contrary, an Indian study reported only minor complications post phacoemulsification surgery under topical anesthesia which did not affect the visual outcome and were not related to anesthetic technique (18). Carino reported that both topical tetracaine and intracameral lidocaine were safe and effective in patients having phacoemulsification surgery (19).

In our study, the incidence of posterior capsule rupture was 0.75%, which is consistent with that reported in the literature. The average unaided and best corrected visual acuity improved significantly (p value< 0.01) after surgery. Only 8.25% developed minor complications which were either transient or treatable, and there were no sight-threatening complications such as endophthalmitis or retinal detachment.

Topical anesthesia and intracameral lidocaine can safely replace other ocular anesthetic techniques in phacoemulsification surgery without increasing the rate of rupture posterior capsule or inducing sight-threatening complications.

Conclusion

Phacoemulsification surgery under topical anesthesia and intracameral lidocaine is a safe procedure and is not associated with sight-threatening complications; it does not increase the risk of posterior capsule rupture and significantly improves the unaided and best corrected visual acuity

Table 1: The demographic characteristics of the studied population

	Males	Females
Number of patients	216 (54%)	184 (46%)
Average age at time of surgery	60.59 ±9.68 years	65.22±8.44 years
Range of age	43 - 78 years	45 – 79 years

Table 2: The average unaided and best-corrected visual acuity (in Decimal) before surgery, one week, and one-month after surgery

	Average unaided visual acuity	Average best corrected visual acuity
Before surgery	0.17	0.17
One week after surgery	0.83 (P value<0.01)	0.9 (P value<0.01)
One month after surgery	0.9 (P value<0.01)	0.93 (P value<0.01)

Table 3: Complications after phacoemulsification surgery under topical anesthesia and intracameral lidocaine

Complications	Number of male patients	Number of female patients	Total number of patients
Corneal edema	12	16	28 (7%)
Dislocated intra ocular lens	0	0	0 (0%)
Rise of intra ocular pressure	0	0	0 (0%)
Inflammatory membrane	1	1	2 (0.5%)
Posterior capsule opacification	2	1	3 (0.75%)
Retinal detachment	0	0	0 (0%)
Endophthalmitis	0	0	0 (0%)
Bullous keratopathy	0	0	0 (0%)
Cystoid macular edema	0	0	0 (0%)
Total	**15 (3.75%)**	**18 (4.5%)**	**33 (8.25%)**

References

1) "Facts About Cataract". September 2009. Archived from the original on 24 May 2015. Retrieved 24 May 2015

2) "Visual impairment and blindness Fact Sheet N°282". August 2014. Archived from the original on 12 May 2015. Retrieved 23 May 2015

3) GLOBAL DATA ON VISUAL IMPAIRMENTS 2010 (PDF). WHO. 2012. p. 6. Archived (PDF) from the original on 2015-03-31

4) Allen D. Cataract. Clin Evid 2005;(14): 762-7. [PubMed]

5) Phacoemulsification Dictionary.com, LLC.

6) Eric C Nagouey (5 June 2004). "Dr. Charles Kelman, 74; Made Cataract Removal Easier". The New York Times. Retrieved 18 November 2017.

7) Waheeb S. Topical anesthesia in phacoemulsification. Oman J Ophthalmol. 2010;3(3):136–139. doi:10.4103/0974-620X.71892

8) Hamilton RC, Gimble HV, Strunin L. Regional anaesthesia for 12,000 cataract extraction and intraocular lens implantation procedures. Can J Anaesth. 1988; 35:615–23.

9) David DB 2nd, Mandel MR. Posterior peribulbar anesthesia: An alternative to retrobulbar anesthesia. J Cataract Refract Surg. 1986; 12:182–4.

10) Kumar CM, Eid H, Dodds C. Sub-Tenon's anaesthesia: complications and their prevention. Eye (Lond). 2011;25(6):694–703. doi:10.1038/eye.2011.69

11) TAVARES, Vinícius Neumann et al. Phacoemulsification under topical anesthesia: series of cases. Rev. bras. oftalmol., Rio de Janeiro, v. 72, n. 3, p. 178-180, June 2013.

12) Fichman RA. Use of topical anesthesia alone in cataract surgery CataractRefractSurg. 1996;22(5):612-4.

13) Chakrabarti A, Nazm N. Posterior capsular rent: Prevention and management. Indian J Ophthalmol 2017; 65:1359-69

14) Abbasoğlu, Ö. E., Hoşal, B., Tekeli, O., & Gürsel, E. (2000). Risk Factors for Vitreous Loss in Cataract Surgery. European Journal of Ophthalmology, 10(3), 227–232.

15) Chen M, Lamattina KC, Patrianakos T, Dwarakanathan S. Complication rate of posterior capsule rupture with vitreous loss during phacoemulsification at a Hawaiian cataract surgical center: a clinical audit. Clin Ophthalmol. 2014; 8:375–378. Published 2014 Feb 5. doi:10.2147/OPTH.S57736

16) Gimbel HV. Posterior capsule tears using phacoemulsification-causes, prevention and management. Eur J Implant Refract Surg

17) Farhan H Zaidi, Melanie C Corbett, Ben J L Burton, Philip A Bloom. Br J Ophthalmol. 2007 Jun; 91(6): 731–736. Published online 2006 Oct 18. doi: 10.1136/bjo.2006.104216

18) Gupta SK, Kumar A, Agarwal S. Cataract surgery under topical anesthesia using 2% lignocaine jelly and intracameral lignocaine: is manual small incision cataract surgery comparable to clear corneal phacoemulsification? Indian J Ophthalmol. 2010;58(6):537–540. doi:10.4103/0301-4738.71713

19) Carino NS, Slomovic AR, Chung F, Marcovich AL: Topical tetracaine versus topical tetracaine plus intracameral lidocaine for cataract surgery. J Cataract Refract Surg. 1998, 24: 1602-1608

Knowledge, Attitudes, and Practice of Complementary and Alternative Medicine in the Abu Dhabi Region

Shaikhah Al Marshedi (1)
Eiman Al Samahi (1)
Maryam AL Mohammed (2)
Ebithal Darwish (3)
Maha Al Fahim (4)

(1) Department of Family Medicine Residency Program, Sheikh Khalifa Medical City, Abu Dhabi, UAE.
(2) Department of Psychiatry Residency Program, Sheikh Khalifa Medical City, Abu Dhabi, UAE.
(3) Department of Family Medicine, Consultant, Ethraa Consultation center, Dubai, UAE.
(4) Director of Family Medicine Program, Sheikh Khalifa Medical City, Abu Dhabi, UAE.

Corresponding Author:
Shaikhah Al Marshedi
Department of Family Medicine Residency Program, Sheikh Khalifa Medical City, Abu Dhabi, UAE.
Abu Dhabi, Reem island
Phone No: 050-1794455
Email: smarshedi@seha.ae

Received: May 2019; Accepted: June 2019; Published: July 1, 2019. Citation: Shaikhah Al Marshedi et al. Knowledge, Attitudes, and Practice of Complementary and Alternative Medicine in the Abu Dhabi Region. World Family Medicine. 2019; 17(7): 8-16. DOI: 10.5742MEWFM.2019.93663

Abstract

Background: Complementary and Alternative Medicine (CAM) is among the major practices that have been used for decades as a substitute or an addition to standard medical practices. Interestingly, the popularity of CAM is increasing. Approximately two-thirds of the world population seeks health care from sources other than those that provide standard care. The study aimed to assess the knowledge, attitudes, and practice of CAM among people living in the Abu Dhabi region.

Methods: This was a descriptive cross-sectional study conducted during 2016–2017 using a self-administered questionnaire. The study targeted both UAE nationals and non-nationals attending seven clinics that are located in the Abu Dhabi region. The inclusion criteria were 1) being >18 years of age and 2) being able to speak Arabic or English. Patients with mental disabilities or those who were illiterate, were excluded. A total of 384 individuals were required for a 95% confidence interval with 5% margin error; thus, the final sample size was 405. Data analysis was performed using the SPSS program. The chi-square test and t-test were used for analyzing categorical and numerical data, respectively.

Results: Most of the participants were UAE nationals (75%) and females (72.7%), and more than half were married, Muslims, between 18 and 44 years of age, and employed. Thirty-seven percent of the respondents eported they had chronic disease. The proportions of respondents who had good, fair, and poor knowledge were 28.4%, 68.6%, and 3%, respectively. Higher education was associated with better knowledge (P = 0.044). The sources of CAM knowledge differed according to certain population characteristics. Educated people used the internet as a source of knowledge, whereas patients with chronic diseases obtained their knowledge primarily from health care providers (P = 0.02, 0.039, respectively). Neutral attitudes toward CAM were held by 68.1% of the respondents. Only 7.7% of the respondents had a positive attitude, and 24.2% had a negative attitude toward CAM. Ninety-five percent of the study group used CAM. The most common practices involved the use of herbs (53.6%), dietary supplements (44.7%), and honey products; the least common practices were chiropractice (9.9%) and cautery (8.6%). Among the respondents, 77.9% did not discuss CAM usage with their primary physicians; however, almost 80% recommended discussing CAM with their doctors. Interestingly, the respondents with higher education and those with chronic diseases were more likely to recommend using CAM as first-line treatment (P = 0.014, 0.036, respectively).

Conclusion: The use of CAM is increasing in the Abu Dhabi region. The results showed fair knowledge in most of the participants, and neutral attitudes toward CAM. Most of our respondents did not discuss CAM with their primary physicians; however, 80% recommend to start discussing CAM usage, with their primary doctors. . The most common practices were the use of herbs, dietary supplements, and honey products. Primary care physicians need to raise awareness about the benefits and risks of CAM use among the population, which can be achieved by patient education regarding evidence-based CAM practices.

Key words: Alternative medicine, complementary medicine, Abu Dhabi region, UAE

Introduction

Complementary and Alternative Medicine (CAM) is among the major practices that have been used for decades. It is either used as a substitute or an addition to standard medical practices. According to the United States National Center for Complementary and Alternative Medicine, CAM is defined as "a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine"(1).

"CAM can be classified into five categories that include the following:
1. Traditional alternative medicine (homeopathic and naturopathic, Chinese, and Ayurvedic medicine)
2. Mind therapies (meditation, prayer, mental healing, art, and music)
3. Biological therapies (herbs and dietary supplementation)
4. Body therapies (chiropractic and osteopathic manipulation, massage)
5. Energy therapies (qigong, reiki, therapeutic touch, and electromagnetic field exposure)" (2).

Interestingly, the popularity of CAM is increasing. Approximately two-thirds of the world's population seeks health care from sources other than those that provide standard medical treatment. The percentages of utilization in developing countries were found to be 90% in Ethiopia, 80% in Africa, 70% in Benin, 70% in India, and 60% in Uganda (4). In developed countries, the usage rate is less than that in developing countries, but it has increased within the last decade. The USA (42%), France (49%), Australia (48%), and Canada (70%) are examples of CAM usage in developed countries(4).

CAM has had a great impact economically. In 2012, Americans spent almost $30.2 billion on different CAM practices like chiropractic, yoga, acupuncture, natural products, and educational resources (books, CDs, and videos) about the use of CAM.(5) Moreover, CAM expenditure in the UK has reached approximately US $2300 million per year, whereas globally, it is estimated to be $60 billion per year (3).

Many studies have shown that CAM is used more often by patients who have chronic illnesses. One study showed that >50% of cancer patients in the USA were using CAM therapies in addition to their standard medical treatment(2). Surprisingly, some treatment guidelines have started to integrate CAM. The NICE guidelines for the treatment of chronic back pain suggest two new methods of CAM (acupuncture and spinal manipulation) as therapeutic options(6). Acupuncture was also shown to be effective in treating high blood pressure, depression, and morning sickness(7). Furthermore, CAM has been found to help alleviate postoperative pain and adverse reactions to chemotherapy(7). Certain populations, such as Ethiopians, have started to incorporate some herbal substances as ingredients in their food. Moreover, other countries (China, North and South Korea, and Vietnam) have integrated traditional medicine into their health care systems(8). As in other countries, the UAE population has shown great interest in CAM. In one study, out of 330 people, 76% were using some kinds of herbal medicine for 48 medical conditions (9). In addition, the same study showed that people believe that herbal medicine is safe, although 27% of them developed side effects. Their main sources of knowledge about herbals were family and friends (9).

Although the UAE has many centers that specialize in alternative medicine, there is insufficient data regarding the efficacy of certain types of CAM. Nonetheless, people still spend money on such therapies. Moreover, CAM can be beneficial, but it can be associated with adverse side effects. Hence, the study aim was to assess the knowledge, attitudes, and practice of people living in Abu Dhabi regarding the use of CAM.

Methods

This was a cross-sectional descriptive study conducted among people living in the Abu Dhabi region from 2016–2017. The study targeted both UAE nationals and non-nationals who attended seven clinics in the Abu Dhabi region, which were Al Bateen, Rowdha, Zaafrana, Maqtaa, Mohammed bin Zayed, Khalifa A., and Bani Yas health care centers. Data were collected by using a simple stratified sampling. Using the sample size calculator, 384 individuals were required to achieve a 95% confidence interval and 5% margin error, so the final sample size was 405. The inclusion criteria were any person >18 years old and ability to speak Arabic or English. Any patients with mental disabilities or who were illiterate were excluded.

Data were collected by using a designed structured questionnaire consisting of four parts. The first part included socio-demographic data, including age, nationality, religion, marital status, education, employment, and presence of chronic diseases. The second part contained 23 questions about knowledge. People who scored 16–23 were considered to have good knowledge about CAM, whereas scores from 8–15 and from 0–7 were considered to have fair and poor knowledge, respectively. The third part included eight questions about attitudes. Scores of 6–8, 3–5, and 0–2 reflected positive, neutral, and negative attitudes, respectively. The fourth part contained questions regarding the most common practices, whether they used CAM as a first-line treatment and if they discussed CAM with their primary care physicians.

This study was approved by the national ethics committee of the Emirate of Abu Dhabi. Two versions of the questionnaire, in Arabic and English, were provided for the participants who met the criteria. The participants were given a brief explanation regarding the purpose of the study and provided written consent. Confidentiality was assured before participation.

Data were presented and analyzed by using the latest version of the Statistical Package for Social Sciences program. A chi-square test was used to test the correlations

between variables. A Likert scale was used to evaluate the attitude of participants to CAM. P values < 0.05 were considered as indicative of statistical significance with a confidence interval of 95%.

Results

Socio-demographic characteristics of the participants in the study

In total, 405 questionnaires were collected. As shown in Table 1, most of the participants were females (72.7%), locals (75.2%), aged between 18–44 (86.7%), married (58.9%), educated at a university and/or above (62.3%), employed (58.1%), and Muslims (92.9%). Chronic disease was reported to be present in 37% of the respondents.

Table 1: Socio-Demographic Characteristics of the Study Sample (n = 405)

Characteristic	No.	(%)
Gender n= 403		
- Male	110	(27.3)
- Female	293	(72.7)
Age (years) n= 390		
- 18–44	338	(86.7)
- 45–65	42	(10.8)
- >65	10	(2.6)
Nationality n= 403		
- Local	303	(75.2)
- Non-local	100	(24.8)
Religion n= 396		
- Muslims	368	(92.9)
- Christian/Catholic	21	(5.3)
- Others	7	(1.8)
Marital status n= 377		
- Single	134	(35.5)
- Married	222	(58.9)
- Divorced	21	(5.6)
Educational level n= 401		
- Primary school and less	26	(6.5)
- Secondary school	125	(31.2)
- University and above	250	(62.3)
Employment status n= 403		
- Student	73	(18.1)
- Employed	234	(58.1)
- Self-employed	11	(2.7)
- Unemployed	85	(21.1)
Have chronic disease n= 405		
- Yes	150	(37)
- No	255	(63)

Knowledge of CAM

A total of 28.4% of the participants had good knowledge, 68.6% had fair knowledge, and 3% had poor knowledge. The percentages of people who recognize the following practices as part of CAM were as follows: 68.6% herbs, 55.8% honey, 53.8% massage, 50% acupuncture, 41.5% yoga, 36.8% prayers, 36.3% cauterization, and 27.4% dietary supplements. The percentages of respondents who correctly identified the benefits of Hijama (cupping therapy) were 75.1% (reduces pain), 51.6% (promotes relaxation), 25.5% (boosts skin), and only 6.4% (helps treat flu symptoms).

The following sources of knowledge on CAM were reported: 61.2% from friends, 42.7% from the internet, 35.6% from the media, 35.5% from personal experience, 12.1% from herbalists, and 6.7% from health care providers.

Factors that affected the knowledge level among the respondents

As shown in Table 2, we found that 31.2% of the respondents who were highly educated (university and above) had good knowledge about CAM compared with only 26.9% of those who only had primary school education. This result was statistically significant (P = 0.044). There were no statistically significant associations between knowledge and sex, age, marital status, nationality, religion, employment, and presence of chronic diseases.

Table 2: Factors that Affected the Knowledge Level Among the Study Population (n = 405)

Characteristic	Good No. (%)	Fair No. (%)	Poor No. (%)	P-value
Sex				0.127
- Male	24 (21.8)	84 (76.4)	2 (1.8)	
- Female	91 (31.1)	193 (65.9)	9 (3.1)	
Age (years)				0.160
- 18–44	95 (28.1)	235 (69.5)	8 (2.4)	
- 45–65	16 (38.1)	26 (61.9)	0 (0)	
- >65	1 (10)	8 (80.0)	1 (10)	
Nationality				0.0785
- Local	87 (28.7)	206 (68.0)	10 (3.3)	
- Non-local	28 (28)	70 (70.0)	2 (2.0)	
Religion				0.848
- Muslims	105 (28.5)	252 (68.5)	11 (3.0)	
- Christian/Catholic	5 (23.8)	15 (71.4)	1 (4.8)	
- Others	1 (14.3)	6 (85.7)	0 (0)	
Marital status				0.896
- Single	36 (26.9)	94 (70.1)	4 (3.0)	
- Married	65 (29.3)	150 (67.6)	7 (3.2)	
- Divorced	7 (33.3)	14 (66.7)	0 (0)	
Educational level				0.044
- Primary school and less	7 (26.9)	19 (73.1)	0 (0)	
- Secondary school	28 (22.4)	89 (71.2)	8 (6.4)	
- University and above	78 (31.2)	168 (67.2)	4 (1.6)	
Employment status				0.148
- Student	24 (32.9)	46 (63)	3 (4.1)	
- Employed	65 (27.8)	160 (68.4)	9 (3.8)	
- Self-employed	0 (0)	11 (100)	0 (0)	
- Unemployed	26 (30.6)	59 (69.4)	0 (0)	
Has chronic disease				0.681
- Yes	43 (28.7)	104 (69.3)	3 (2)	
- No	27 (12.9)	174 (82.9)	9 (4.2)	

Sources of knowledge about CAM

As shown in Table 3, there was a statistically significant association between the internet as a source of CAM information and sex and education. Females tended to use the internet as the source of knowledge more than males (P = 0.013). Higher educational level was associated with greater use of the internet as a source of knowledge (P = 0.002). Non-UAE nationals tended to obtain their CAM information from health care providers more than did UAE nationals (P = 0.02).

Table 3: Sources of Knowledge about CAM

Socio-demographic	Friends No. (%)	P-value	Personal experience No. (%)	P-value	Internet No. (%)	P-value	Herbalist No. (%)	P-value	Health care No. (%)	P-value
Sex		0.623		0.821		0.013		0.114		0.104
- Male	65 (59.1)		40 (36.4)		36 (32.7)		18 (16.4)		11 (10)	
- Female	181 (61.8)		103 (35.2)		136 (46.4)		31 (10.6)		16 (5.5)	
Age (years)		0.121		0.068		0.43		0.845		0.618
- 18–44	207 (61.2)		114 (33.7)		141 (41.7)		42 (12.4)		23 (6.8)	
- 45–65	27 (64.3)		21 (50)		21 (50)		4 (9.5)		2 (4.8)	
- >65	3 (30)		2 (20)		3 (30)		1 (10)		0 (0)	
Nationality		0.153		0.401		0.286		0.446		0.047
-Local	191 (63)		111 (36.6)		124 (40.9)		39 (12.9)		16 (5.3)	
-Non-local	55 (55)		32 (32)		47 (47)		10 (10)		11 (11)	
Religion		0.086		0.477		0.895		0.215		0.06
- Muslims	229 (62.2)		133 (36.1)		156 (42.4)		47 (12.8)		23 (6.2)	
- Christian/Catholic	9 (42.9)		7 (33.3)		10 (47.6)		0 (0)		2 (9.5)	
- Others	6 (85.7)		1 (14.3)		3 (42.9)		1 (14.3)		2 (28.6)	
Marital status		0.906		0.219		0.825		0.05		0.278
-Single	82 (61.2)		38 (28.4)		55 (41)		9 (6.7)		8 (6)	
-Married	141 (63.5)		83 (37.4)		96 (43.2)		34 (15.3)		19 (8.6)	
-Divorced/widowed	13 (63.5)		7 (33.3)		10 (47.6)		2 (9.5)		0 (0)	
Educational level		0.221		0.921		0.02		0.656		0.702
- Primary school	18 (69.2)		10 (38.5)		7 (26.9)		2 (7.7)		1 (3.8)	
- Secondary school	69 (55.2)		43 (34.4)		45 (36)		14 (11.2)		10 (8)	
- University and above	158 (63.2)		89 (35.6)		120 (48)		33 (13.2)		16 (6.4)	

Based on the information in Table 4, there was a statistically significant correlation between chronic disease and health care professionals as the source of CAM information (P = 0.039). Back pain and hypertensive patients obtained knowledge from personal experience (P = 0.001 and 0.041, respectively). On the other hand, the respondents with musculoskeletal problems and skin problems reported herbalists as their source of knowledge (P = 0.037 and 0.000, respectively).

Respondents' attitudes toward CAM

Most of the respondents had a neutral attitude toward CAM (68.1%). Only 7.7% of the respondents had a positive attitude, and 24.2% had a negative attitude toward CAM. The attitude that CAM improves immunity and general health was held by 72% of the population, and 84.7% thought falsely that CAM was always safe and had no side effects. Only 24% believed that CAM might have a bad interaction when combined with conventional medicine, and 14.8% agreed that CAM was not always cheaper than conventional medicine.

Factors that affected the attitudes among the study population

Knowledge has an effect on attitudes, as shown in Table 5. Among those who had a positive attitude toward CAM, 17% had good knowledge compared with none (0%) who had poor knowledge (P = 0.000). There were no significant associations between sex, age, nationality, religion, marital status, employment, having a chronic disease, and the attitude of the respondents toward CAM.

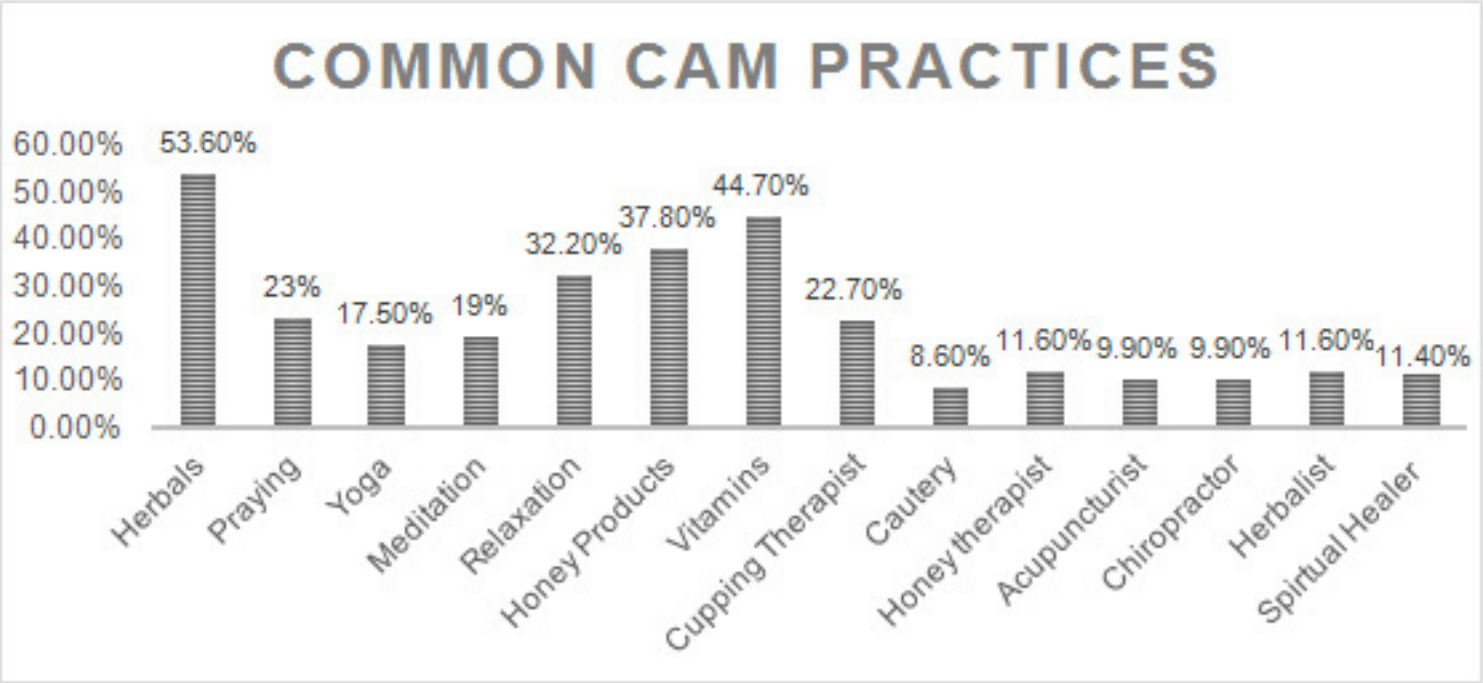
Table 5: Factors that Affected the Attitude among the Study Population (n = 405)

Characteristic	Positive No. (%)	Neutral No. (%)	Negative No. (%)	P-value
Sex				0.162
- Male	4 (12.9)	77 (28)	29 (29.9)	
- Female	27 (87.1)	198 (72)	68 (70.1)	
Age (years)				0.058
- 18–44	23 (74.2)	231 (87.2)	84 (89.4)	
- 45–65	8 (25.8)	27 (10.2)	7 (7.40)	
- >65	0 (0)	7 (2.6)	3 (3.2)	
Nationality				0.571
- Local	21 (67.7)	209 (76.3)	73 (74.5)	
- Non-local	10 (32.3)	65 (23.7)	25 (25.5)	
Religion				0.558
- Muslims	29 (96.7)	254 (93.7)	85 (89.5)	
- Christian/Catholic	1 (3.3)	13 (4.8)	7 (7.4)	
- Others	0 (0)	4 (1.5)	3 (3.2)	
Marital status				0.307
- Single	8 (26.7)	94 (37)	32 (34.4)	
- Married	22 (73.3)	143 (56.3)	57 (61.3)	
- Divorced	0 (0)	17 (6.7)	4 (4.3)	
Educational level				0.233
- Primary school and less	4 (12.9)	14 (5.1)	8 (8.3)	
- Secondary school	6 (19.4)	86 (31.4)	33 (34.4)	
- University and above	21 (67.7)	174 (63.5)	55 (57.3)	
Employment status				0.134
- Student	2 (6.5)	49 (17.8)	22 (22.7)	
- Employed	19 (61.3)	156 (56.7)	59 (60.8)	
- Self-employed	0 (0)	10 (3.6)	1 (1)	
- Unemployed	10 (32.3)	60 (21.8)	15 (15.5)	
Has chronic disease				0.619
- Yes	14 (9.3)	100 (66.7)	36 (24.2)	
- No	17 (6.7)	176 (69.0)	62 (24.3)	
Knowledge				0.000
- Good	20 (17.4)	70 (60.9)	25 (21.7)	
- Fair	11 (4)	199 (71.6)	68 (24.5)	
- Poor	0 (0)	7 (58.3)	5 (41.7)	

Practice of CAM

Approximately 95% of the study population reported using CAM practices. Figure 1 shows that use of herbals was the most common alternative medicinal treatment in CAM (53.6%), followed by dietary supplements (44.7%), honey products (37.8%), relaxation (32.3%), praying (23%), Hijama (22.7%), and meditation (19%).

Figure 1: CAM common practices



CAM was never discussed with their health care providers, by 77.8% of the respondents, but 80% recommended that people should start discussing the use of CAM with their physicians, and 58.8% showed interest in using CAM as a first-line treatment.

Factors that affected the practice of CAM

As presented in Table 6, the results showed that 57% of university graduates recommended CAM as a first-line treatment compared with 6.3% of respondents with only a primary school education or less (P = 0.014). There was also a strong association between using CAM as a first-line treatment by people who had chronic disease; 66% of the respondents with chronic disease recommended CAM as a first-line treatment compared with 34.01% who had no chronic illness (P = 0.036).

Discussion

To our knowledge, this is the first study in the UAE about knowledge, attitudes, and practice of CAM by residents living in Abu Dhabi. We have similar studies that were conducted in Saudi Arabia and Bangladesh, the results of which can be compared with those of the present study. In this study, there were 27.2% males and 72.7% females. This sex distribution differs from those in the Saudi Arabia and Bangladesh studies in which the percentages of each sex were almost evenly distributed(10,11).

Knowledge related to CAM

In our study, almost 28.4%, 68.6%, and 3% of the respondents had good, fair and poor knowledge, respectively.

The results showed that higher education was associated with better knowledge. This finding was similar to what we found in the study done in Bangladesh(10); however, this finding was contrary to that in the Saudi Arabia study, in which CAM use was common among people with lower education levels(11). These results could be explained by the fact that highly educated people have more access to written materials and evidence-based medicine and are more likely to ask their physician about concerns. We presumed that there would be an association between the level of knowledge and age; however, we did not find a significant association. The presumption that older generations know more about alternative medicine can be justified by the fact that before the revolution of medicines and hospitals, people used the available resources; for example, herbals as a treatment, whereas presently there are health care services that provide the needed care, so older people are no longer dependent on alternative medicine. We also expected that UAE nationals would have more knowledge about alternative medicine than would non-nationals, but our study did not show that. Our sample included mostly people inside Abu Dhabi island, but if we included more clinics from outside Abu Dhabi island, the results might have been different. The Bangladesh study results are similar to our results in terms of age and nationality in association with knowledge(10), but they are different from those of the Saudi Arabia study which showed that nationals and older people knew more about CAM than did non-nationals and younger populations(11), with similar results regarding age and knowledge reported by Miller (1997)(12).

The sources of CAM knowledge varied in our study. Highly educated people tended to get their knowledge from the internet. We could have assumed that was because of the easy accessibility to evidence-based medicine through the internet. Interestingly, patients with chronic diseases tended to get their knowledge about CAM from health care providers. However, health care providers now seem to know

Table 6: Factors that Affect the Practice of CAM

Factors	Use of CAM as first-line treatment No. (%)	P-value
Sex		0.469
- Male	62 (26.2)	
- Female	175 (73.8)	
Age (years)		0.492
- 18–44	197 (87.6)	
- 45–65	21 (9.3)	
- >65	7 (3.1)	
Nationality		0.452
- Local	175 (74.2)	
- Non-local	61 (25.8)	
Religion		0.177
- Muslims	218 (94.4)	
- Christian/Catholic	8 (3.5)	
- Others	5 (2.2)	
Marital status		0.099
- Single	70 (32.1)	
- Married	133 (61)	
- Divorced	15 (6.9)	
Educational level		0.014
- Primary school and less	15 (6.3)	
- Secondary school	87 (36.7)	
- University and above	135 (57)	
Has chronic disease		0.036
- Yes	97 (66.0)	
- No	50 (34.01)	
Knowledge		0.441
- Good	67 (28.2)	
- Fair	166 (69.7)	
- Poor	5 (2.1)	

more about approved alternative medicines and, apparently, have started to offer them to their patients. The respondents with musculoskeletal and skin disorders reported that they obtained their knowledge from herbalists. This finding could be because of the widespread knowledge about the herbs used by our ancestors to treat skin and joint disorders and the fact that such practices are still continuing for these disorders.

Attitudes toward CAM

Our data showed that more than two-thirds of the respondents had a neutral attitude toward CAM and a quarter had a positive attitude. Only 7.7% had a negative attitude. Neither the Saudi Arabia nor Bangladesh study classified the overall attitudes of their participants (10,11). In the present study, more than two-thirds of the respondents believed that all CAM treatments are cheaper than conventional medicinal treatments, with a similar percentage believing incorrectly that CAM is always safe. These percentages are somehow similar to those of the Bangladesh study although their numbers were lower (10).

Although the costs of CAM methods were not explored in our study, we know that some CAM practices are more expensive. People believe that CAM is always cost effective and lower cost. In terms of safety, many people believe that because CAM remedies are natural and do not contain chemicals, they will be safe. However, “natural” does not always mean safe since some natural products can be harmful.

Practice of CAM

The percentage of respondents who used CAM was almost 95% in the present study. This percentage is similar to that of the study conducted in Bangladesh (97%), but use of CAM in Saudi Arabia was slightly lower (85%). We included prophet medicine, herbals, and dietary supplements in CAM practices, which might explain the high percentage of CAM use in our study. The most common practice of CAM in this study was the use of herbals, followed by the use of vitamins, honey products, relaxation, praying, cupping, and meditation. These findings were similar to those of the Saudi Arabia study in which the most common practices were the use of herbs, prayer, honey, and Hijama(11). It seems that we share the same practices because Saudi Arabian culture is similar to our own in term of habits and religious background. On the other hand, the most common practices in Bangladesh included the use of herbs, oil massage, and Holy water(10).

In the present study, 77.8% did not discuss CAM use with their primary care physicians, a finding that was significantly different from that in the study in Saudi Arabia in which the percentage was lower (50%) (11). Al Faris et al. reported that 7.7% of people would not discuss CAM with their physicians and 37.7% would discuss CAM use with their physicians if they asked (12). People with chronic diseases recommended using CAM as a first-line treatment, which could have been because they felt overwhelmed by having to take multiple medications and wanting to cut down on the number they are using.

Conclusion

The majority of our sample had fair knowledge about CAM, with one-third having good knowledge. The respondents with higher educational levels had better knowledge. Sources of CAM knowledge differed based on certain population characteristics and factors. The respondents with higher educational levels more often used the internet as a source of knowledge, whereas those with chronic diseases obtained their knowledge most often from health care providers.

Most of the respondents had a neutral attitude toward CAM. More than two-thirds believed that CAM is always cheaper than conventional medicine, with a similar percentage believing that CAM is always safe.

Most of the respondents did not discuss CAM use with their physician, but almost 80% of them recommended starting discussing CAM with their doctors. People with better knowledge and those with chronic diseases recommended using CAM as a first-line treatment.

As primary care physicians, we recommend improving the knowledge of patients about CAM by establishing educational programs about the benefits and safety of CAM methods. We also recommend that physicians start to teach patients about evidence-based CAM practices. More studies need to be conducted in different regions of the UAE to assess the knowledge, attitudes, and practice of CAM.

Competing interests

The authors declare that they have no competing interests.

Acknowledgments

The authors would like to thank all of the participants and the physicians in Abu Dhabi AHS clinics for their contributions.

References

1. Panchal GS, Mehta AS, Panchal JR, Balat JD, Nair G. Knowledge, attitude and practice of non-medicinal alternative therapy in general population of Ahmedabad, India. J Clin Exp Res 2014; 2: 115–22.
2. Ventola CL. Current issues regarding complementary and alternative medicine (CAM) in the United States: part 1: The widespread use of CAM and the need for better-informed health care professionals to provide patient counseling. P T 2010; 35: 461–8.
3. World Health Organization. WHO launches the first global strategy on traditional and alternative medicine [internet]. WHO Int 2016 [Accessed on: 11th September 2016]. Available from: http://www.who.int/mediacentre/news/releases/release38/en/
4. Traditional Medicine Growing Needs and Potential - WHO Policy Perspectives on Medicines, No. 002, May 2002 [Internet]. World Health Organization. World Health Organization; [cited 2019May25]. Available from: https://apps.who.int/medicinedocs/en/d/Js2293e/
5. Nahin RL, Barnes PM, Stussman BJ. Expenditures on complementary health approaches: United States, 2012 [Internet]. National Health Statistics Reports. 2016 [cited 2019May25]. Available from: https://www.cdc.gov/nchs/data/nhsr/nhsr095.pdf
6. Complementary and alternative medicine: the clinical guidelines from NICE. Medscape 2016 [Accessed on: 7th September 2016]. Available from: http://www.medscape.com/viewarticle/727720
7. Acupuncture [Internet]. National Cancer Institute. [cited 2019May26]. Available from: https://www.cancer.gov/about-cancer/treatment/cam/hp/acupuncture-pdq
8. Mohammed AY, Muhammedawel K, Demeke A. Knowledge, attitude and practice of community on traditional medicine in Jara town, bale zone south east Ethiopia. Science Journal of Public Health 2016; 4: 241–6.
9. Albraik FA, Rutter PM, Brown D. A cross-sectional survey of herbal remedy taking by United Arab Emirate (UAE) citizens in Abu Dhabi. Pharmacoepidemiol Drug Saf 2008; 17: 725–32.
10. Ahammed M, Nyeem AB, Mannan A, Ahmed MM. Knowledge, attitude and practice of complementary and alternative medicine (CAM) among selected adult Bangladeshi population. 2018. [Accessed on: 6th January, 2019] Available from: http://www.advancedjournal.com/archives/2018/vol3/issue2/3-2-199
11. Elolemy A, Albedah A. Public knowledge, attitude and practice of complementary. 2012. [Accessed on: 6th January, 2019] Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/pmc3282134/
12. Millar WJ. Use of alternative health care practitioners by Canadians. Can J Public Health 1997; 88: 154–8.

A Novel Case Series of Munchausen Syndrome by Proxy Victim

Ashoor R. Sarhat (1)
Zena N. Abdulrahman (2)
Sarab K. Abedalrahman (3)
Islam AR Zardawy (2)

(1) Tikrit Nursing College
(2) Tikrit Medical College
(3) Salah Al-Deen Health Directorate

Corresponding author:
Ashoor R Sarhat
Tikrit Nursing College
Iraq
Email: ashoor.sarhat@gmail.com

Received: May 2019; Accepted: June 2019; Published: July 1, 2019. Citation: Ashoor R. Sarhat et al. A Novel Case Series of Munchausen Syndrome by Proxy Victim. World Family Medicine. 2019; 17(7): 17-21. DOI: 10.5742MEWFM.2019.93664

Abstract

Introduction: Munchausen Syndrome by Proxy or (Caregiver-fabricated illness in a child) is a form of child abuse which entails a child's illness induced by a caretaker; leading to a series of medical procedures and treatments that are unnecessary and potentially harmful as it may lead to significant morbidity and mortality.

Result and Discussion: A 35 year old lady, was married twice. From the 1st marriage she had 2 children (18 year-daughter and 17-year-old son) and from the 2nd marriage she had a (3-year-old daughter). She was known to have social and marital problems and diagnosed as a case of depression and was on multiple antidepressants and attempted suicide several times. She is using her 6-year-old daughter and her 3-year-old grandson for visiting doctors 4-5 times a week. She had a relationship with a neighbor, a young man (SA) who was a driver and transported the mother and her daughter to hospital or the doctor's clinic. The reasons for doctor visits were different including urinary tract infection, otitis media, gastroenteritis, respiratory infections, different kinds of trauma etc.

Conclusion: Munchausen syndrome by proxy is a complex type of abuse, usually misdiagnosed and under-diagnosed, and its sequelae have a significant impact. In Iraq, there are some reported cases of Munchausen syndrome by proxy but it is definitely underestimated. Its diagnosis is associated with social and legal problems concerning perpetrator parent, especially in the absence of a framework of formal rules. Health staff and investigators' adequate training is essential in revealing cases of Munchausen syndrome by proxy.

Key words: MSBP in Iraq, Munchausen syndrome by proxy: A Novel presentation.

Introduction

Child abuse according to the W.H.O., is caused by an adult whether intentionally or unintentionally which leads to bad effects on the child's health and physical and psychosocial development. (1) Professor of pediatrics, Roy Meadow was first to describe Munchausen by proxy in 1977 when he described caretaker who made their child sick and named it as "Munchausen syndrome by proxy" (MSBP) (2, 3). MSBP is a rare, unique and serious form of child abuse with a high rate of recurrence (4, 5). These parents frequently seek medical care and adapt different illness histories that may exaggerate presenting signs and symptoms or are fabricated, for which unnecessary and various medical or surgical procedures are done (6). Intentional poisoning may be the cause of MSBP, which makes it unique in forensic medicine. A careful approach is required in dealing with such issues (7). MSBP is of unknown etiology, but studies stated that both psychological and biological elements take part in the development of this syndrome. A history of early parental loss or abuse in childhood, causes MSBP according to one of the theories. Major stress, like marital problems, may cause MSBP is suggested by some researchers (4). MSBP diagnosis is a very difficult job because presenting signs and symptoms can mimic many diseases. MSBP diagnosis is a time-consuming or impossible process (8).

The criteria for diagnosis changed to be as follows(9):
1. The offender is one of the parents or those who take their role.
2. The disease's symptoms frequently require multiple medical visits, and the perpetrator insists on presence of a certain disease etiology.
3. Illness's signs and symptoms end if the patient is isolated from the perpetrator.
MSBP is better to be based on correct medical practice that takes a long time to collect sound information about the mother's concerns and actions(10).

MSBP outcome: From previous studies, the best results of management of MSBP cases are obtained if the victim and perpetrator (mother or caregiver) are separated for a long time. In this period, victims should be carefully monitored(11). The medical setting is the theater of a type of child maltreatment (MSBP). Researchers think that the diagnosis of MSBP is proposed after someone discovers a caretaker's or mother's precise maneuver or strategy to continue her child's illness(12). Misleading of the medical staff is the most prevalent method =. Poisoning drugs and other substances and counterfeiting the child's samples are other methods. In this case they exaggerate the true, present complaints (signs and symptoms). Other offender'smethods include poisoning with drug and other substances and falsification of the child's samples. The spectrum ranges from mild to severe cases. In mild cases, the perpetrator gives only the tampering story, but in other circumstances the situation is more complicated. In severe cases, the perpetrator may severely harm the child and even cause deaths (13). MSBP's most frequent symptoms are as follows: hemorrhages, loss of consciousness, apnea, recurrent diarrhea, recurrent vomiting and redness (14) A mother with a personality disorder is the usual perpetrator (15). The perpetrators (mothers or caregiver) are highly professional in deceiving medical staff. They use the child's actual disease and abuse the interest and emotional reactions of the medical personnel. Psychiatric intervention is often not possible because they cannot be accessed. Victim's rehabilitation is impossible if the victim continues to remain within the family after diagnosis of MSBP. Child maltreatment continues in patients and siblings(16). Child patient follow-up is highly important because 17% of the patients allowed to go home even if there was no physical damage, were abused(17) There are few reported cases in Iraq (4, 18).

Result and Discussion

This case met the criteria of MSBP because of recurrent visits to different medical specialties, frequent blood and imaging investigations, persistent use of drugs, and exposure to trauma. The perpetrator insisted on persistence of signs and symptoms with different causes; urinary tract infections UTI, gastroenteritis GE, chest infection, mesenteric lymphadenopathy LAP, and otitis media OM, as shown in Table 1.

The perpetrator is a known case of severe depression with several suicidal attempts which may explain the etiology of MSBP. This may be explained by the fact that Iraq, for more than 20 years, suffered from wars and sanctions and displacement which affected all aspects life especially health of children, adolescents and women (19). In addition to the previous war experience, Iraq suffered from the invasion and occupation of a terrorist organization to some Iraqi governorates in 2014. The family migrated to Kirkuk governorate from 2014-2016, after the invasion and occupation of a terrorist organization to some Iraqi governorates. The perpetrator had multiple exposure to violence and trauma because of marital problems. She is very intelligent and skillful in medical procedures, investigation, and therapy because her husband is a pharmacist, as shown in Table 2.

AM is the 2nd victim: A 3 year old male child abused by his mother and grandmother (a victim with double perpetrator). AM is from a single parent family because his mother is divorced, and the benefit is an emotional gain. AM's mother and grandmother keep dressing and looking well all the time in spite the severity of the child's condition as in Table 3.

The clinical characteristics of AM (2nd victim) are as follows; recurrent pediatrician visits, blood and diagnostic investigations as in Table 4.

Table 1: Clinical characteristics of 1st victim: RO is a 6 year old female child

Variable	Mean times /year
Pediatrician visits	100
Surgeon visit	10
Other Specialist	10
Hospital visit	10
Hospital Admission	10
Average hospital stay	5 days
Blood investigation	58
Urinalysis	100
Ultrasonography	40
X ray	10
Accidents (abuse, fall)	10
Drug Free period	60 days
Types of Drugs	Antibiotics, NSAIDs, zinc, Iron, multivitamins,
Possible diagnosis	UTI, GE, chest infection, mesenteric LAP, OM
Psychiatric problems	Acute Post traumatic stress disorder
Financial burden	10000 $/year

Table 2: Characteristic of the Principle Perpetrator

	Problem	Frequency
1	Medical visits	50 times/year
2	Psychiatrist visits	20 times/year
3	Attempted Suicide	20 times/ year
4	Psychiatric illness	Severe depression
5	Drug treatment	Multiple Antidepressant
6	Additional treatment	Multiple ECT
7	Violence & Trauma	19 times / year
8	Problems	Medical & nursing staff who not cooperate with
9	Benefits	Emotional, Financial, and support benefits
10	Appearance	well dressed in all visits even in severe child illnesses
11	Marital environment	Marital Problems with violence
12	Socioeconomic status	Loans for which they have several court cases
13	Knowledge & skills	Medical procedures & therapy. husband is a pharmacist
14	Financial burden	3000 $/year

Table 3: Perpetrator and characteristics of 2nd victim: A 3 years old male child

	Perpetrator & characteristics
1.	The main perpetrator is his grandmother from his mother's side
2.	The 2nd perpetrator is his mother
3.	His mother was a victim of his grandmother
4.	Single parent family (mother divorced)
5.	Mother's benefits are emotional relations
6.	Mother is a young lady

Table 4: Clinical characteristics of 2nd victim: A 3 years old male child

Variable	Mean times /year
Pediatrician visits	20
Surgeon visit	10
Other Specialist	5
Hospital consultation visit	5
Hospital Admission	5
Average hospital stay	4 days
Blood investigation	10
Urinalysis	3
Ultrasonography	3
X ray	6
Accidents (abuse, fall)	14
Drug Free period	120 days
Types of Drugs	Antibiotics, bronchodilator, zinc, Iron, multivitamins,
Possible diagnosis	OM, chest infection, falls
Financial burden	2000 $/year

RO had history of severe trauma when she saw her mother hanging herself by hanging rope on the roof of the room. She was diagnosed with post traumatic stress disorders PTSD because she met the diagnostic criteria for PTSD. 1) exposure to severe traumatic event associated with intense fear, horror or disorganized behavior; 2) persistent re-experiencing of the traumatic event such as repetitive play or recurring intrusive thoughts; 3) avoidance of cues associated with the trauma or emotional numbing; 4) persistent arousal; 5) persistent signs and symptoms for more than one month following the traumatic experience and 6) significant functioning disturbance (20). This case met the diagnostic criteria for Acute PTSD because these signs were present for less than three months. [21, 22].

The factors that complicatd the situation for all victims of MSBP:

1. Absence of Iraqi legislation in management of child abuse and particularly MSBP
2. Absence of medical community awareness about MSBP
3. Special problems unique to the Iraqi society regarding women (mothers).
4. In Iraq, there are serious deficiencies in mental health care services. (4, 23)
5. Presence of legal and social obstacles in management of such cases
6. Psychosocial problems usually occur gradually after multiple factors like: continuous stress, conflicts, external environmental factors and internal psychogenic factors which include Internalizing Items (fear of new situations, self underestimation, sadness, unhappy, hopeless, worries a lot, seems to have less fun); and Externalizing items (takes unnecessary risks, does not listen to rules, does not understand others' feelings, fights with other children, teases others, blames others for troubles, refuses to share) (23).

Conclusions

There are few reported cases of MSBP in Iraq, which is due to lack of awareness of health professionals regarding it. Surely there are lot of victims of women and child abuse in Iraqi communities who are suffering behind the social and cultural boundaries. This means it is continuous, because if the victim escapes death, or severe injury, he or she will be exposed to a big emotional shock. This study revealed a novel and unique presentation of MSBP which was characterized by a mother perpetrator with multiple victims of different ages. Also this study revealed one adult victim of MSBP. This research deals with unique characteristics of the Iraqi community and culture. There is an urgent need to create awareness for early recognition of MSBP. Foundation of a legal system applicable for religious, social, and cultural characteristics of Iraqi community is required. Longterm analytical studies of child and women maltreatment and neglect are required.

References

1. Alexander B. Preventing Child Maltreatment: A Guide to Taking Action and Generating Evidence. World Health Organization and International Society for Prevention of Child Abuse and Neglect 2006:1–102.
2. Meadow R Munchausen syndrome by proxy. Arch Dis Child. 1982;57(2):92-8
3. İnce T, Yurdakök K. Munchausen by proxy sendromu; ağır bir çocuk istismarı formu. Türkiye Çocuk Hastalıkları Dergisi. 2014;3:165–70.
4. Sarhat AR. Munchausen's syndrome by Proxy in Iraq; case series. Tikrit Medical Journal. 2016;21(1): 271–84.
5. Özdemir D, Yalçın S. Akgül S, et al. Munchausen by Proxy syndrome: a case series study from Turkey. J Fam Viol. 2015;30(5):661–71.
6. Meadow R. Munchausen syndrome by proxy: the hinterland of child abuse. Lancet. 1977;310(8033): 343–5.
7. Bartsch C, Risse M, Schütz H, et al. Munchausen syndrome by proxy (MSBP): an extreme form of child abuse with a special forensic challenge. Forensic Sci Int. 2003;137 (2-3);147–51.
8. Galvin HK, Newton AW, Vandeven AM. Update on Munchausen syndrome by proxy. Curr Opin Pediatr. 2005;17 (2):252–7.
9. Rosenberg DA. Munchausen syndrome by proxy: medical diagnostic criteria. Child Abuse Negl. 2003;27(4):421–430.
10. Vennemann B, Bajanowski T, Karger B, et al. Suffocation and poisoning–the hard hitting side of Munchausen syndrome by proxy. Int J Legal Med. 2005;119 (2):98–102.
11. Bools C, Neale B, Meadow R. Munchausen syndrome by proxy: a study of psychopathology. Child Abuse Negl. 1994;18(9):773–8.
12. Pankratz L. Persistent problems with the "separation test" in Munchausen syndrome by proxy. The Journal of Psychiatry & Law. 2010;38(3):307–23.
13. Forsyth BWC. Munchausen syndrome by proxy. In: Lewis, editors. Child and Adolescent Psychiatry: A Comprehensive Textbook. Lippincott Williams & Wilkins, Philadelphia: USA; 2000. 1223–1229.
14. Rosenberg DA. Web of deceit: a literature review of Munchausen syndrome by proxy. Child Abuse Negl. 1987;11(4):547–63.
15. Meadow R. Management of Munchausen syndrome by proxy. Arch Dis Child. 1985;60(4):385–93.
16. Davis P, McClure RJ, Rolfe K, et al. Procedures, placement, and risks of further abuse after Munchausen syndrome by proxy, non-accidental poisoning, and non-accidental suffocation. Arch Dis Child. 1998;78(3):217–21.
17. Klepper J, Heringhaus A, Wurthmann C, et al. Expect the unexpected: favourable outcome in Munchausen by Proxy syndrome. Eur J Pediatr. 2008;167(9):1085–8.
18. Khalid K Rajab, Mohamed T. AL-Karkhi. Munchausen syndrome by proxy: (A case Report). IMJ Iraqi Medical Journal 2007; 53 (2, 1): 1-12.
19. Ahmed J Hassen, Sarhat AR, Nashwan N Hanna. Depression among Secondary Schools Students in Tikrit District. Indian Journal of Forensic Medicine & Toxicology 2019:13 (2):
20. Faiadh HF, Sarhat AR. Screening of Post Traumatic Stress Disorders among Preschools Children in Baijee City. Diyala Journal For Pure Science 2010; 6 (3):1-15.
21. Terr, L. Childhood traumas: an outline and overview. Am J. Psychiatry. 1991,148, 1-20.
22. Mulder RT, Fergusson DM, Beautrais AL, and Joyce PR. Relationship between dissociation, childhood sexual abuse, childhood physical abuse, and mental illness in a general population sample. Am. J. Psychiatry. 1998,155(6), 806-11.
23. Nashwan N. Hanna, Sarhat AR, Mohammad K. Abdulwahd. Screening of Psychosocial Problems among Secondary School Students in Alhawyja City. Tikrit Medical Journal 2009; 15 (1): 287-95. Second Scientific Conference

The safest value of plasma triglycerides

Mehmet Rami Helvaci (1)
Onder Tonyali (1)
Abdulrazak Abyad (2)
Lesley Pocock (3)

(1) Specialist of Internal Medicine, MD
(2) Middle-East Academy for Medicine of Aging, MD, MPH, MBA, AGSF
(3) medi+WORLD International

Correspondence:
Dr Mehmet Rami Helvaci,
07400, ALANYA, Turkey
Phone: 00-90-506-4708759
Email: mramihelvaci@hotmail.com

Received: May 2019; Accepted: June 2019; Published: July 1, 2019.
Citation: Helvaci M.R. et al. The safest value of plasma triglycerides. World Family Medicine. 2019; 17(7): 22-27.
DOI: 10.5742MEWFM.2019.93662

Abstract

Background: We tried to understand the safest value of plasma triglycerides according to some components of the metabolic syndrome.

Methods: Patients with plasma values of triglycerides lower than 100 mg/dL were collected into the first, lower than 150 mg/dL into the second, lower than 200 mg/dL into the third, and 200 mg/dL or higher into the fourth groups, respectively.

Results: We studied 457 cases (266 females and 191 males), totally. The female ratio decreased from the first towards the fourth groups (64.1% versus 49.4%, $p<0.01$), gradually, whereas the mean ages of the groups, body mass index (BMI), and low density lipoproteins increased just up to the plasma triglycerides value of 200 mg/dL, significantly ($p<0.05$ for all). On the other hand, the mean fasting plasma glucose and prevalence of smoking, white coat hypertension, hypertension, diabetes mellitus, and chronic obstructive pulmonary disease increased parallel to the plasma triglycerides values from the first towards the fourth groups, gradually. Interestingly, the greatest number of deteriorations (six components deteriorated, significantly) was observed just at the passage from the first into the second groups of the study cases.

Conclusions: Plasma triglycerides may actually be some acute phase reactants indicating disseminated endothelial damage, inflammation, fibrosis, and accelerated atherosclerosis with eventual end-organ insufficiencies all over the body. There may be highly significant relationships between plasma triglycerides values and aging, BMI, and smoking. Interestingly, the greatest number of deteriorations of the components of the metabolic syndrome was observed just above the plasma triglycerides value of 100 mg/dL.

Key words:
Triglycerides,
acute phase reactant,
chronic endothelial damage,
accelerated atherosclerosis,
end-organ insufficiency

Introduction

Chronic endothelial damage may be the most common sort of vasculitis, and the leading cause of aging and death in human beings (1-4). Much higher blood pressure (BP) of the afferent vasculature may be the major triggering mechanism by causing recurrent injuries on endothelium. Probably, whole afferent vasculature including capillaries are chiefly involved in the process. Thus the term of venosclerosis is not as famous as atherosclerosis in medicine. Because of the chronic endothelial damage, inflammation, edema, and fibrosis, vascular walls thicken, their lumens narrow, and they lose their elastic structures which reduce blood supply to terminal organs, and increase systolic BP further. Some of the well-known components of the inflammatory process are physical inactivity, animal-rich diet, overweight, smoking, alcohol, hypertriglyceridemia, hyperbetalipoproteinemia, dyslipidemia, impaired fasting glucose, impaired glucose tolerance, white coat hypertension (WCH), and chronic inflammatory processes including rheumatologic disorders, chronic infections, and cancers for the development of terminal endpoints including obesity, hypertension (HT), diabetes mellitus (DM), cirrhosis, peripheric artery disease (PAD), chronic obstructive pulmonary disease (COPD), chronic renal disease (CRD), coronary heart disease (CHD), mesenteric ischemia, osteoporosis, stroke, and aging (5-9). Although early withdrawal of the triggering causes may delay terminal consequences, after development of HT, DM, cirrhosis, COPD, CRD, CHD, PAD, mesenteric ischemia, osteoporosis, stroke, or aging, endothelial changes cannot be reversed completely due to their fibrotic nature. Up to now, the triggering mechanisms and terminal endpoints were researched under the titles of metabolic syndrome, aging syndrome, or accelerated endothelial damage syndrome in the medical literature, extensively (10-13). Although its normal limits have not been determined clearly yet, increased plasma triglycerides values may be significant indicators of the metabolic syndrome (14). Due to the growing proof about the strong association between higher plasma triglycerides values and prevalence of CHD, Adult Treatment Panel (ATP) III adopts lower cutpoints for triglycerides abnormalities than did ATP II (15, 16). Although ATP II determined the normal plasma triglycerides value as lower than 200 mg/dL in 1994, World Health Organisation in 1999 (17) and ATP III in 2001 reduced their normal limit to as lower than 150 mg/dL (15). Although these cutoff points are usually used to define limits of the metabolic syndrome, there are suspicions about the safest value of plasma triglycerides in medicine. Beside that, smoking may be found among the most common causes of vasculitis all over the world. It is a major risk factor for the development of atherosclerotic consequences including HT, DM, CHD, PAD, COPD, cirrhosis, CRD, mesenteric ischemia, osteoporosis, stroke, and aging (18, 19). We tried to understand the safest value of plasma triglycerides according to some components of the metabolic syndrome in the present study.

Material and Methods

The study was performed in the Internal Medicine Polyclinic of the Dumlupinar University between August 2005 and March 2007. Consecutive patients above the age of 15 years were included. Their medical histories including HT, DM, COPD, and already used medications were learnt, and a routine check up procedure including fasting plasma glucose (FPG), triglycerides, and low density lipoproteins (LDL) was performed. Current daily smokers with six pack-months and cases with a history of three pack-years were accepted as smokers. Patients with devastating illnesses including type 1 DM, malignancies, acute or chronic renal failure, chronic liver diseases, hyper- or hypothyroidism, and heart failure were excluded to avoid their possible effects on weight. Additionally, anti-hyperlipidemic drugs, metformin, and/or acarbose users were excluded to avoid their possible effects on blood lipid profiles and/or body weight (20, 21). Body mass index (BMI) of each case was calculated by the measurements of the same physician instead of verbal expressions. Weight in kilograms is divided by height in meters squared (15). Cases with an overnight FPG value of 126 mg/dL or greater on two occasions or already using antidiabetic medications were defined as diabetics (15). An oral glucose tolerance test with 75-gram glucose was performed in cases with a FPG value between 110 and 126 mg/dL, and diagnosis of cases with a 2-hour plasma glucose value of 200 mg/dL or greater is DM (15). Additionally, office blood pressure (OBP) was checked after a 5-minute rest in seated position with a mercury sphygmomanometer on three visits, and no smoking was permitted during the previous 2 hours. A 10-day twice daily measurement of blood pressure at home (HBP) was obtained in all cases, even in the normotensives in the office due to the risk of masked HT after a 10-minute education session about proper BP measurement techniques (22). An additional 24-hour ambulatory blood pressure monitoring was not needed due to its similar effectivity with the HBP measurements (3). Eventually, HT is defined as a mean BP of 135/85 mmHg or greater on HBP measurements, and WCH as an OBP of 140/90 mmHg or greater but a mean HBP measurement of lower than 135/85 mmHg (22). The spirometric pulmonary function tests were performed in required cases after the physical examination, and the criterion for diagnosis of COPD is post-bronchodilator forced expiratory volume in one second/forced vital capacity of less than 70% (23). Eventually, patients with plasma triglycerides values of lower than 100 mg/dL were collected into the first, lower than 150 mg/dL into the second, lower than 200 mg/dL into the third, and 200 mg/dL or higher into the fourth groups, respectively. The female ratio, mean age, BMI, FPG, triglycerides, and LDL, and prevalence of smoking, WCH, HT, DM, and COPD were detected in each group and compared in between. Mann-Whitney U test, Independent-Samples T test, and comparison of proportions were used as the methods of statistical analyses.

Results

We studied 457 cases (266 females and 191 males), totally. The female ratiodecreased from the first towards the fourth groups (64.1% versus 49.4%, p<0.01), gradually whereas the mean ages of the groups, BMI, and LDL increased just up to the plasma triglycerides value of 200 mg/dL, significantly (p<0.05 for all). On the other hand, the mean FPG and prevalence of smoking, WCH, HT, DM, and COPD increased parallel to the plasma triglycerides values from the first towards the fourth groups, gradually. Interestingly, the greatest number of deteriorations (six components deteriorated, significantly) was observed just at the passage from the first into the second groups of the study cases. Just three components deteriorated at the passage from the second into the third groups, significantly. Although two components including smoking and COPD deteriorated at the passage from the third into the fourth groups, the mean values of LDL decreased, significantly (140.9 versus 128.2 mg/dL, p=0.009) at the the passage, thus the number of deterioration was two minus one that was equal to one between the third and fourth groups (Table 1).

Discussion

Excess weight may lead to both structural and functional abnormalities of many organ systems of the body. Adipose tissue produces leptin, tumor necrosis factor-alpha, plasminogen activator inhibitor-1, and adiponectin-like cytokines which act as acute phase reactants in the plasma (24, 25). Excess weight-induced chronic low-grade vascular endothelial inflammation may play a significant role in the pathogenesis of accelerated atherosclerosis all over the body (1, 2). Additionally, excess weight may cause an increased blood volume as well as an increased cardiac output thought to be the result of the increased oxygen need of the excessive fat tissue. The prolonged increase in the blood volume may lead to myocardial hypertrophy terminating with a decreased cardiac compliance. Beside that, the mean FPG and total cholesterol increased and high density lipoproteins (HDL) decreased parallel to the increased mean BMI values (26). Combination of these cardiovascular risk factors will eventually terminate with increased left ventricular stroke work and risk of arrhythmias, cardiac failure, and sudden cardiac death. Similarly, the prevalence of CHD and stroke increased parallel to the increased BMI values

Table 1: Characteristic features of the study cases according to plasma triglycerides values

Variable	Lower than 100 mg/dL	*p*-value	Lower than 150 mg/dL	*p*-value	Lower than 200 mg/dL	*p*-value	200 mg/dL or greater
Number	159		133		78		87
Mean age	*40.6 ± 17.6 (16-83)*	*0.001*	*46.9 ± 15.9 (16-82)*	*0.014*	*51.7 ± 11.8 (23-73)*	Ns*	50.5 ± 12.3 (21-86)
Female ratio	*64.1%*	Ns	57.8%	Ns	56.4%	Ns	*49.4%*
Prevalence of smoking	*16.3%*	*0.05>*	*23.3%*	Ns	*28.2%*	*0.01>*	*42.5%*
Mean BMI†	*26.7 ± 5.6 (16.7-49.3)*	*0.000*	*29.5 ± 6.0 (18.4-50.5)*	Ns	30.0 ± 4.9 (19.2-49.0)	Ns	29.7 ± 4.7 (21.0-42.9)
Mean value of FPG‡	*102.7 ± 40.3 (59-341)*	Ns	102.7 ± 26.6 (71-244)	*0.009*	*114.6 ± 43.6 (68-320)*	Ns	*117.1 ± 42.1 (80-287)*
Mean value of triglycerides	*70.3 ± 16.4 (27-99)*	*0.000*	*120.8 ± 14.8 (100-149)*	*0.000*	*174.6 ± 14.9 (150-199)*	*0.000*	*304.8 ± 118.7 (175-1.144)*
Mean value of LDL§	*109.7 ± 33.7 (43-269)*	*0.000*	*132.1 ± 31.8 (64-228)*	*0.048*	*140.9 ± 27.7 (75-210)*	*0.009*	*128.2 ± 39.8 (10-239)*
Prevalence of WCH‖	*23.2%*	*0.05>*	*30.8%*	Ns	32.0%	Ns	*34.4%*
*Prevalence of HT***	*11.9%*	*0.001 >*	*23.3%*	Ns	25.6%	Ns	*25.2%*
*Prevalence of DM****	*8.1%*	Ns	12.7%	Ns	*16.6%*	Ns	*22.9%*
*Prevalence of COPD*****	*9.4%*	Ns	11.2%	Ns	*15.3%*	*0.001 >*	*28.7%*

*Nonsignificant (p>0.05) †Body mass index ‡Fasting plasma glucose §Low density lipoproteins ‖White coat hypertension **Hypertension ***Diabetes mellitus ****Chronic obstructive pulmonary disease

in other studies (26, 27), and risk of death from all causes including cancers increased throughout the range of moderate to severe weight excess in all age groups (28). The relationships between excess weight and elevated BP and plasma triglycerides were described in the metabolic syndrome (14), and clinical manifestations of the syndrome included obesity, dyslipidemia, HT, insulin resistance, and proinflammatory and prothrombotic states (12). Similarly, prevalence of smoking (42.2% versus 28.4%, $p<0.01$), excess weight (83.6% versus 70.6%, $p<0.01$), DM (16.3% versus 10.3%, $p<0.05$), and HT (23.2% versus 11.2%, $p<0.001$) were all higher in the hypertriglyceridemia group in another study (29). On the other hand, the prevalence of hyperbetalipoproteinemia was similar both in the hypertriglyceridemia (200 mg/dL or higher) and control groups (18.9% versus 16.3%, $p>0.05$, respectively) in the above study (29). Similarly, plasma LDL values increased up to the plasma triglycerides value of 200 mg/dL, but then decreased in the present study, too ($p<0.05$ for all). Beside that, the mean BMI increased just up to the plasma triglycerides value of 150 mg/dL ($p=0.000$), but it did not change with plasma triglycerides value of 150 mg/dL or higher, significantly ($p>0.05$).

It is a well-known fact that smoking causes a chronic inflammatory process on the vascular endothelium, probably depending upon the concentration of smoke that terminates with an accelerated atherosclerosis, end-organ insufficiency, early aging, and premature death. Thus smoking has to be included among the major components of the metabolic syndrome. Strong and terminal atherosclerotic effects of smoking are the most obvious in Buerger's disease (Thromboangiitis obliterans). It is an obliterative disease characterized by inflammatory changes in the small and medium-sized arteries and veins, and it has never been reported in the absence of smoking in medicine. Although the strong atherosclerotic effects of smoking are well known, smoking in humans and nicotine administration in animals may be associated with decreased BMI values (30). Proof revealed an increased energy expenditure during smoking both on rest and light physical activity (31), and nicotine supplied by patch after smoking cessation decreased caloric intake in a dose-related manner (32). According to an animal study, nicotine may lengthen intermeal time and decrease amount of meal eaten (33). Additionally, the mean BMI seems to be the highest in former, the lowest in current and medium in never smokers (34). Smoking may be associated with a postcessation weight gain (35). Similarly, although CHD was detected with similar prevalence in both genders in the previous study (36), prevalence of smoking and COPD were higher in males with CHD against the higher mean values of the BMI, LDL, and triglycerides and higher prevalences of WCH, HT, and DM in females with CHD. This result may show both the strong atherosclerotic and weight decreasing roles of smoking (37). Similarly, the incidence of a myocardial infarction is increased six-fold in women and three-fold in men who smoke 20 cigarettes per day (38). In another definition, smoking may be more dangerous for women probably due to the higher BMI and its consequences in them. Parallel to the above results, the proportion of smokers is consistently higher in men in the literature (21). So smoking is probably a powerful atherosclerotic risk factor with some suppressor effects on appetite. Smoking-induced weight loss may be related to the smoking-induced chronic vascular endothelial inflammation all over the body, since loss of appetite is one of the main symptoms of a disseminated inflammation in the body. Physicians can even understand healing of patients via their normalizing appetite. Several toxic substances found in cigarette smoke get into the circulation by means of the respiratory tract, and cause a vascular endothelial inflammation until their clearance from the circulation. But due to the repeated smoking habit of the individuals, the clearance process never terminates. So the patients become ill with loss of appetite, permanently. In another explanation, smoking-induced weight loss is an indicator of being ill instead of being healthy (32-34). After smoking cessation, normal appetite comes back with a prominent weight gain in the patients but the returned weights are their physiological or 'normal' weights, actually.

Despite the several negative effects of excess weight on health, nearly three-quarters of cases above the age of 30 years have excess weight (39). The prevalence of excess weight increases by decades, particularly after the third decade, up to the eighth decade of life (39). So 30 and 70 years of age may be the breaking points of life for weight, and aging may be the major determiner factor of excess weight. Probably, partially decreased physical and mental stresses after the age of 30 years and debility and comorbid disorders-induced restrictions after the age of 70 years may be the major causes for the changes of BMI values at these ages. Interestingly, the mean age and BMI increased just up to the plasma triglycerides values of 200 mg/dL, significantly, in the present study. So smoking remained as the major causative factor for the hypertriglyceridemia after the plasma triglycerides values of 200 mg/dL in the present study.

Although ATP III reduced the normal limit of plasma triglycerides values as lower than 150 mg/dL in 2001 (15), whether or not much lower limits provide additional benefits for health is unclear. In the present study, prevalence of smoking was the highest in the highest triglycerides having group which may also indicate inflammatory roles of smoking in the metabolic syndrome, since triglycerides may actually be some acute phase reactants in the plasma. The mean FPG and prevalence of smoking, WCH, HT, DM, and COPD increased parallel to the plasma triglycerides values from the first towards the fourth groups, gradually. In our opinion, significantly increased mean age by the increased plasma triglycerides values may be secondary to aging-induced decreased physical and mental stresses, which eventually terminates with onset of excess weight and other components of the metabolic syndrome. Interestingly, although the mean age increased from the lowest triglycerides having group towards the triglycerides value of 200 mg/dL, it then decreased. A similar trend was also seen with the mean LDL and BMI values. These trends may be due to the fact that although the borderline high triglycerides values (150-199 mg/dL) are seen together with

physical inactivity and overweight, the high triglycerides (200-499 mg/dL) and very high triglycerides values (500 mg/dL or greater) may be secondary to both genetic factors and terminal consequences of the metabolic syndrome including smoking, obesity, DM, HT, COPD, cirrhosis, CRD, PAD, CHD, and stroke (15). But although the underlying causes of the high and very high plasma triglycerides values may be a little bit different, probably risks of the terminal endpoints of the metabolic syndrome do not change in them. For example, prevalence of HT, DM, and COPD were the highest in the highest triglycerides having group in the present study. Eventually, although some authors reported that lipid assessment can be simplified by measurements of total cholesterol and HDL values alone (40), the present study and most of the others indicated a causal relationship between higher triglycerides and terminal consequences of the metabolic syndrome (41).

As a conclusion, plasma triglycerides may actually be some acute phase reactants indicating disseminated endothelial damage, inflammation, fibrosis, and accelerated atherosclerosis with eventual end-organ insufficiencies all over the body. There may be highly significant relationships between plasma triglycerides values and aging, BMI, and smoking. Interestingly, the greatest number of deteriorations of the components of the metabolic syndrome including mean age, smoking, BMI, LDL, WCH, and HT were observed just above the plasma triglycerides value of 100 mg/dL in the present study.

References

1. Widlansky ME, Gokce N, Keaney JF Jr, Vita JA. The clinical implications of endothelial dysfunction. J Am Coll Cardiol 2003; 42(7): 1149–1160.
2. Ridker PM. High-sensitivity C-reactive protein: potential adjunct for global risk assessment in the primary prevention of cardiovascular disease. Circulation 2001; 103(13): 1813–1818.
3. Helvaci MR, Seyhanli M. What a high prevalence of white coat hypertension in society! Intern Med 2006; 45(10): 671-674.
4. Helvaci MR, Kaya H, Seyhanli M, Cosar E. White coat hypertension is associated with a greater all-cause mortality. J Health Sci 2007; 53(2): 156-160.
5. Helvaci MR, Kaya H, Yalcin A, Kuvandik G. Prevalence of white coat hypertension in underweight and overweight subjects. Int Heart J 2007; 48(5): 605-613.
6. Helvaci MR, Kaya H, Duru M, Yalcin A. What is the relationship between white coat hypertension and dyslipidemia? Int Heart J 2008; 49(1): 87-93.
7. Helvaci MR, Kaya H, Seyhanli M, Yalcin A. White coat hypertension in definition of metabolic syndrome. Int Heart J 2008; 49(4): 449-457.
8. Helvaci MR, Kaya H, Sevinc A, Camci C. Body weight and white coat hypertension. Pak J Med Sci 2009; 25(6): 916-921.
9. Helvaci MR, Sevinc A, Camci C, Yalcin A. Treatment of white coat hypertension with metformin. Int Heart J 2008; 49(6): 671-679.
10. Eckel RH, Grundy SM, Zimmet PZ. The metabolic syndrome. Lancet 2005; 365(9468): 1415-1428.
11. Grundy SM, Brewer HB Jr, Cleeman JI, Smith SC Jr, Lenfant C. Definition of metabolic syndrome: Report of the National Heart, Lung, and Blood Institute/American Heart Association conference on scientific issues related to definition. Circulation 2004; 109(3): 433-438.
12. Tonkin AM. The metabolic syndrome(s)? Curr Atheroscler Rep 2004; 6(3): 165-166.
13. Franklin SS, Barboza MG, Pio JR, Wong ND. Blood pressure categories, hypertensive subtypes, and the metabolic syndrome. J Hypertens 2006; 24(10): 2009-2016.
14. Helvaci MR, Kaya H, Gundogdu M. Association of increased triglyceride levels in metabolic syndrome with coronary artery disease. Pak J Med Sci 2010; 26(3): 667-672.
15. Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) final report. Circulation 2002; 106(25): 3143-3421.
16. National Cholesterol Education Program. Second Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel II). Circulation 1994; 89(3): 1333-1445.
17. World Health Organization. Definition, Diagnosis and Classification of Diabetes Mellitus and its Complications. Report of a WHO consultation 1999.
18. Helvaci MR, Aydin Y, Gundogdu M. Smoking induced atherosclerosis in cancers. HealthMED 2012; 6(11): 3744-3749.
19. Fodor JG, Tzerovska R, Dorner T, Rieder A. Do we diagnose and treat coronary heart disease differently in men and women? Wien Med Wochenschr 2004; 154(17-18): 423-425.
20. Helvaci MR, Kaya H, Borazan A, Ozer C, Seyhanli M, Yalcin A. Metformin and parameters of physical health. Intern Med 2008; 47(8): 697-703.
21. Helvaci MR, Aydin Y, Varan G, Abyad A, Pocock L. Acarbose versus metformin in the treatment of metabolic syndrome. World Family Med 2018; 16(5): 10-15.
22. O'Brien E, Asmar R, Beilin L, Imai Y, Mallion JM, Mancia G, et al. European Society of Hypertension recommendations for conventional, ambulatory and home blood pressure measurement. J Hypertens 2003; 21(5): 821-848.
23. Vestbo J, Hurd SS, Agustí AG, Jones PW, Vogelmeier C, Anzueto A, et al. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease: GOLD executive summary. Am J Respir Crit Care Med 2013; 187(4): 347-65.
24. Funahashi T, Nakamura T, Shimomura I, Maeda K, Kuriyama H, Takahashi M, et al. Role of adipocytokines on the pathogenesis of atherosclerosis in visceral obesity. Intern Med 1999; 38(2): 202–206.
25. Yudkin JS, Stehouwer CD, Emeis JJ, Coppack SW. C-reactive protein in healthy subjects: associations with obesity, insulin resistance, and endothelial dysfunction: a potential role for cytokines originating from adipose tissue? Arterioscler Thromb Vasc Biol 1999; 19(4): 972–978.

26. Zhou B, Wu Y, Yang J, Li Y, Zhang H, Zhao L. Overweight is an independent risk factor for cardiovascular disease in Chinese populations. Obes Rev 2002; 3(3): 147–156.
27. Zhou BF. Effect of body mass index on all-cause mortality and incidence of cardiovascular diseases--report for meta-analysis of prospective studies open optimal cut-off points of body mass index in Chinese adults. Biomed Environ Sci 2002; 15(3): 245–252.
28. Calle EE, Thun MJ, Petrelli JM, Rodriguez C, Heath CW Jr. Body-mass index and mortality in a prospective cohort of U.S. adults. N Engl J Med 1999; 341(15): 1097–1105.
29. Helvaci MR, Aydin LY, Maden E, Aydin Y. What is the relationship between hypertriglyceridemia and smoking? Middle East J Age and Ageing 2011; 8(6).
30. Grunberg NE, Greenwood MR, Collins F, Epstein LH, Hatsukami D, Niaura R, et al. National working conference on smoking and body weight. Task Force 1: Mechanisms relevant to the relations between cigarette smoking and body weight. Health Psychol 1992; 11: 4-9.
31. Walker JF, Collins LC, Rowell PP, Goldsmith LJ, Moffatt RJ, Stamford BA. The effect of smoking on energy expenditure and plasma catecholamine and nicotine levels during light physical activity. Nicotine Tob Res 1999; 1(4): 365-370.
32. Hughes JR, Hatsukami DK. Effects of three doses of transdermal nicotine on post-cessation eating, hunger and weight. J Subst Abuse 1997; 9: 151-159.
33. Miyata G, Meguid MM, Varma M, Fetissov SO, Kim HJ. Nicotine alters the usual reciprocity between meal size and meal number in female rat. Physiol Behav 2001; 74(1-2): 169-176.
34. Laaksonen M, Rahkonen O, Prattala R. Smoking status and relative weight by educational level in Finland, 1978-1995. Prev Med 1998; 27(3): 431-437.
35. Froom P, Melamed S, Benbassat J. Smoking cessation and weight gain. J Fam Pract 1998; 46(6): 460-464.
36. Helvaci MR, Kaya H, Gundogdu M. Gender differences in coronary heart disease in Turkey. Pak J Med Sci 2012; 28(1): 40-44.
37. Helvaci MR, Aydin Y, Gundogdu M. Atherosclerotic effects of smoking and excess weight. J Obes Wt Loss Ther 2012; 2: 145.
38. Prescott E, Hippe M, Schnohr P, Hein HO, Vestbo J. Smoking and risk of myocardial infarction in women and men: longitudinal population study. BMJ 1998; 316(7137): 1043-1047.
39. Helvacı MR, Kaya H, Ozer C. Aging may be the major determiner factor of excess weight. Middle East J Age and Ageing 2008; 5(2).
40. Di Angelantonia E, Sarwar N, Perry P, Kaptoge S, Ray KK, Thompson A, et al. Major lipids, apolipoproteins, and risk of vascular disease. JAMA 2009; 302(18): 1993-2000.
41. Sarwar N, Sandhu MS, Ricketts SL, Butterworth AS, Di Angelantonia E, Boekholdt SM, et al. Triglyceride-mediated pathways and coronary disease: collaborative analysis of 101 studies. Lancet 2010; 375(9726): 1634-1639.

Communication Skills of Physicians during Consultation in Out-Patient Settings at a Tertiary Hospital in Nepal

Sudarshan Paudel (1)
Krishna Bahadur G.C. (1)
Madhusudan Subedi (1)
Amit Arjyal (1)
Sunil K Daha (2)
Binita Lamichhane (2)
Paban Kumar Sharma (3)

(1) School of Public Health, Patan Academy of Health Sciences
(2) Undergraduate Medical Student, Patan Academy of Health Sciences
(3) School of Medicine, Patan Academy of Health Sciences

Corresponding Author:
Sudarshan Paudel,
G.P.O. Box no. 26500,
Patan Academy of Health Sciences, School of Public Health,
Nepal
Email: sudarshanpaudel@gmail.com

Received: May 2019; Accepted: June 2019; Published: July 1, 2019.
Citation: Paudel S. et al. Communication Skills of Physicians during Consultation in Out-Patient Settings at a Tertiary Hospital in Nepal. World Family Medicine. 2019; 17(7): 28-35. DOI: 10.5742MEWFM.2019.93662

Abstract

This article explores patient consultation practices of physicians at Patan Academy of Health Sciences-Teaching Hospital. We assessed the communication practice of physicians when interacting with patients.

Methods: The study participants (physicians) were selected through non-probabilistic method and observed between May-July, 2017 in doctor-patient interactions in an inpatient setting using a dichotomous checklist. Mean comparison of total scores of each category with independent variables were analyzed.

Results: A total of 169 interactions were observed. Among them 13.6% were senior physicians, 35.5% were junior physicians and 50.9% were Medical Officers (including Postgraduate Interns). Mean total score of observed behavior of communication skill and practice ranged from poor to satisfactory across category and showed statistically significant variations. The ANOVA test between groups is strongly significant (p=0.000). More than three-quarters (78.11%) have given insufficient time (less than 6 minutes) for consultation. Average interaction time was 5.26 (SD 2.31) minutes. The mean consultation time of Interns and Medical Officers is least (4.36; SD 1.79). Almost half of the seniors, one third of the juniors and 5.8% of Interns and Medical Officers have given sufficient time for consultation.

Conclusion: The study has revealed that history taking skill and practice is dearth mainly in lower level physicians (medical officers/Interns and Junior faculties). The consultation time given by physicians was also insufficient. Thus, hospital authorities should give attention to improve communication skills of physicians.

Key words: Communication skills; History taking; Outpatient setting; Patan hospital, Nepal

Introduction

A medical consultation is a private and intimate interaction between physician and patient [1-3]. It provides an opportunity to establish a therapeutic relationship with patients and listen to their story with an unfolding of symptoms, problems and feelings [4,5]. However, patients tell their stories in different, usually unstructured, ways. Very often physicians limit themselves to a few technical questions they want to ask patients [6-7]. Presently, various communication modules are available but technologies and innovations are merely helpful exclusive of a comprehensive history of a patient [8-10]. The literature has averred that by the medical history, physicians garner 60–80 percent of the information relevant for a diagnosis and the history alone can lead to the final diagnosis in 76 percent [11-14].

In this context, this research aimed to explore history taking during consultation in out-patient settings, hence to stimulate those concerned into a much wider scale of survey by attempting to shade light on the behavior of physicians during their interaction with patients.

Methods

We conducted a cross-sectional study at Patan Hospital, a tertiary level [15] teaching hospital of Patan Academy of Health Sciences in Lalitpur, Nepal. Data was collected from May to July, 2017. The source population for the study was the 255 physicians working in thirteen clinical departments of the hospital. A sample size of 154 physicians was determined based on the assumption that 50% of physicians would greet patients during interaction with a margin of error of 5% and 95% confidence limit. The sample size obtained was then adjusted for a finite study population with a 10% contingency yielding a sample size of 169. The sampling method was non-probabilistic based on availability and convenience. Data collection was done using a questionnaire in outpatient settings. Eight evaluators (voluntary) were selected among the third year of undergraduate medical students and trained on observation techniques and use of study questionnaire.

A standardized checklist by Lehman was used [12]. The checklist contained 39 items divided into an introduction section(items 1-7), body of the interview (items 8-29), explanations by the physician (items 30-36), and a conclusion section (items 37-39).

The introduction section was meant to measure behavior, courtesy, respect and politeness. The body section was meant to show and measure concern, empathy, compassion, regarding patients psycho-social problems, emotions both verbally and non- verbally. The explanation section showed the physician's ability to properly communicate in a language that the patient understands and checks whether he or she is making an earnest attempt to make the patient comprehend the details of examination and procedures as well as to obtain the patient's agreement. The conclusion section was designed to show and measure the physician's ability to build reassurance, comfort and hope in the patient.

Since items in the checklist describe objective behaviors, a dichotomous scale ticking 'yes' when behavior is observed, and 'no' if not observed or inapplicable when not relevant was modified from Lehman.

$$\text{Total score in \%} = \frac{\text{Total No of yes answers} \times 100}{\text{Total No. of answers}}$$

Rating scale of scores: <50−very poor; 50-60−Poor; 61-70−barely satisfactory; 71-80−satisfactory and >80−extremely satisfactory Scale was adopted from the Dutch scale Bensing [16].

A time duration of 6 minutes was chosen as a cut off for defining sufficient time during the consultation. This was based on a combination of physician patient ratio at Patan Hospital where one physician is expected to carry out about 40 consultations during an OPD day. Prevailing consultation times in similar situations elsewhere were also taken into account [3].

The analysis of the data was carried out with SPSS version 16 package. Mean (SD) of total scores were computed for each physician category. Comparison of mean total scores by physician category was computed using statistical methods.

Study protocol was approved by IRC-PAHS. Hospital Director and concerned department heads were given explanations about the observation, but they were not told to whom and when the observation would take place to reduce bias.

Results

A total of 169 physicians took part in interactions with patients. There were 103 (60.9%) male and 66 (39.1%) female respondents. The majority were in the age group of 25-40 years (76.3%). The proportion of senior faculties (Professor and Associate Professors) was 23 (13.6%), junior faculties (Assistant Professors and Lecturer) were 60 (35.6%) and the remaining was Medical Officers 86 (50.8%).

The total positive responses were analyzed as a total score out of a hundred and mean values of these scores for the different categories of the checklist and the total checklist were then rated on the devised scale. The mean of the total scores for each group item of the checklist and for each category was rated. Ratings for the Interns and Medical Officers appeared as a low score for all parts. The introduction section of the checklist rating was very poor for all categories except senior physicians whilst the conclusion section was comparatively better compared among all sections. Professors obtained the highest score in all sections in almost all the categories. (Table 2)

Table 1: The characteristics of the respondent physicians (N = 169)

Demographic Details		f (%)
Sex	Male	66 (39.1%)
	Female	103 (60.9%)
Designation of Respondents	Professors (SF)	13 (7.7%)
	Associate Professors (SF)	10 (5.9%)
	Assistant Professors (JF)	21 (12.4%)
	Lecturers (JF)	39 (23.1%)
	Medical Officers	86 (50.9%)
Age-range of participants	Less than 25	8 (4.7%)
	25 – 40 years	129 (76.3%)
	41 – 50 years	19 (11.2%)
	More than 51 years	13 (7.7%)
Working Departments	General Practice	42 (24.9%)
	Medicine	19 (11.2%)
	Surgery	15 (8.9%)
	Obstetrics and Gynecology	14 (8.3%)
	Orthopedic	15 (8.9%)
	Pediatric	17 (10.1%)
	Psychiatric	5 (3.0%)
	Anaesthesia	10 (5.9%)
	Dental	5 (3.0%)
	Ear, Nose and Throat	8 (4.7%)
	Dermatology	3 (1.8%)
	Ophthalmology	2 (1.2%)
	Radiology	11 (6.5%)

Note: SF = Senor Faculty, JF = Junior Faculty

Table 2: Mean of total score for observed behavior by physician category

Checklist Items	Category									
	MO		Lecturer		Assist. Prof		Assoc. Prof		Prof	
	Mean % Score	*Rating*	*Mean % Score*	*Rating*	*Mean % Score*	*Rating*	*Mean % Score*	*Rating*	*Mean % Score*	*Rating*
Introduction *(Q1-7)*	30.23	***e***	49.81	***e***	41.49	***e***	57.14	***d***	59.34	***d***
Body part (Q8-29)	48.78	***e***	61.53	***d***	64.06	***c***	75.90	***b***	67.48	***c***
Explanation (Q30-36)	57.30	***d***	68.86	***c***	68.02	***c***	77.14	***b***	76.92	***b***
Conclusion (Q37-39)	71.31	***b***	69.23	***c***	82.53	***a***	80.00	***a***	84.61	***a***

Note: a = very satisfactory; b = satisfactory; c = barely satisfactory; d = poor; e = very poor

The data has averred that only 16.6% initiating sessions were satisfactory while slightly more than one-third (38.5%) consultations were effective in gathering information. 55.1% of consultations were able to explain the patient during history taking. The majority of the conclusion sections were observed as barely satisfactory (60.4%) while only 32% were very satisfactory.

The mean difference of scores of physicians' categories based on gender was not statistically significant (p=0.925). The mean score of male was slightly less (21.879) than female (22.009).

The mean total scores for observed behaviors were compared for variations with each category for the different parts of the checklist and the differences were noted through one-way Anova and post-hoc LSD test. The mean difference of Medical Officers was statistically significant with Professors (p=0.002), Associate Professors (p=001), Assistant Professors (p=0.01) and Lecturers (p=0.002). Whereas the mean total scores of observed behaviors for the three categories were not statistically significant. (Table 3)

Table 3: Multiple comparisons of mean by using one-way ANOVA and Post-hoc (LSD)

Position of Participant	Position of Participant	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Professor	Associate Professor	-1.58#	3.48	.651	-8.45	5.29
	Assistant Professor	2.68	2.92	.359	-3.08	8.45
	Lecturers	3.00	2.65	.259	-2.23	8.23
	Medical Officers	7.92*	2.46	.002	3.06	12.78
Associate Professor	Assistant Professor	4.26	3.18	.182	-2.01	10.54
	Lecturers	4.58	2.93	.120	-1.21	10.37
	Medical Officers	9.50*	2.76	.001	4.04	14.96
Assistant Professor	Lecturers	0.32	2.24	.888	-4.11	4.74
	Medical Officers	5.24*	2.01	.010	1.26	9.21
Lecturers	Medical Officers	4.92*	1.60	.002	1.77	8.08

* The mean difference is significant at the 0.05 level.
# Associate Professors scored higher than Professors

Table 4: Mean of total score for observed behavior of respondents based on working departments

Observed behaviours	Working Departments												
	EM	IM	O/G	Pedi	Orth.	Surg.	Radio	Psych	ENT	Dent	Ophth	Derm	Anes
Introduction	13.27	51.89	42.86	55.46	59.05	50.48	38.96	64.29	32.14	31.43	42.86	38.10	47.14
Body	27.17	64.60	69.16	82.89	69.70	80.91	64.05	53.41	39.21	35.46	52.27	62.12	65.91
Explanation	32.31	78.20	83.67	66.39	79.05	86.67	50.65	75.00	71.43	77.14	85.71	61.91	71.43
Conclusion	62.70	87.72	71.43	80.39	68.89	95.56	57.58	83.33	75.00	66.67	83.33	66.67	73.33
Total	33.86	70.60	66.78	71.28	69.17	78.41	52.81	69.01	54.45	52.68	66.04	57.20	64.45

Note: EM – Emergency Medicine; IM – Internal Medicine; O/G – Obstetrician and Gynecology; Pedi – Pediatric; Orth. – Orthopedic; Surg. – Surgery; Radi.- Radiology; Psyc – Psychiatric; ENT – Ear, Nose and Throat; Dent – Dental; Ophth – Ophthalmology; Derm – Dermatology; Anes – Anesthesia

Table 5: Mean of total score for observed behavior of respondents based on positions

	Introduction	Body	Explanation	Conclusion	Mean total
Professor	59.34	67.48	76.92	84.62	72.09
Associate Professor	57.14	75.91	77.14	80.00	72.55
Assistant Professor	41.50	64.07	68.03	82.54	64.04
Lecturer	49.82	61.54	68.87	69.23	62.37
MOs	30.23	48.78	57.31	71.32	51.91

The mean total scores for observed behaviors of physicians working in the Emergency Medicine Department was observed least (33.86%) while Pediatric department was highest (71.28%). Patan Hospital is known for its Ob/Gyne services where around 7,000 delivery assisted births occur per annum; the mean total score for observed behavior of Obstetrician and Gynecologist was 66.78% which is barely satisfactory. The behavior of physicians working in Surgery, Internal Medicine, Psychiatric and Orthopedic departments was found satisfactory; whilst behavior of physicians working in Radiology, Dentistry, ENT, Dermatology are poor whilst Ophthalmology and Anesthetist are barely satisfactory. (Table 4)

The mean total scores for observed behaviors of physicians based on position was also calculated. The behavior of Professors and Associate Professors was satisfactory with mean total score 72.09 % and 72.55 % respectively. The behavior of Medical Officers was poor with mean total score 51.91% whilst behavior of Assistant Professors and Lecturers was barely satisfactory (with mean total score 64.04% and 62.37% respectively). (Table 5)

Consultation Time

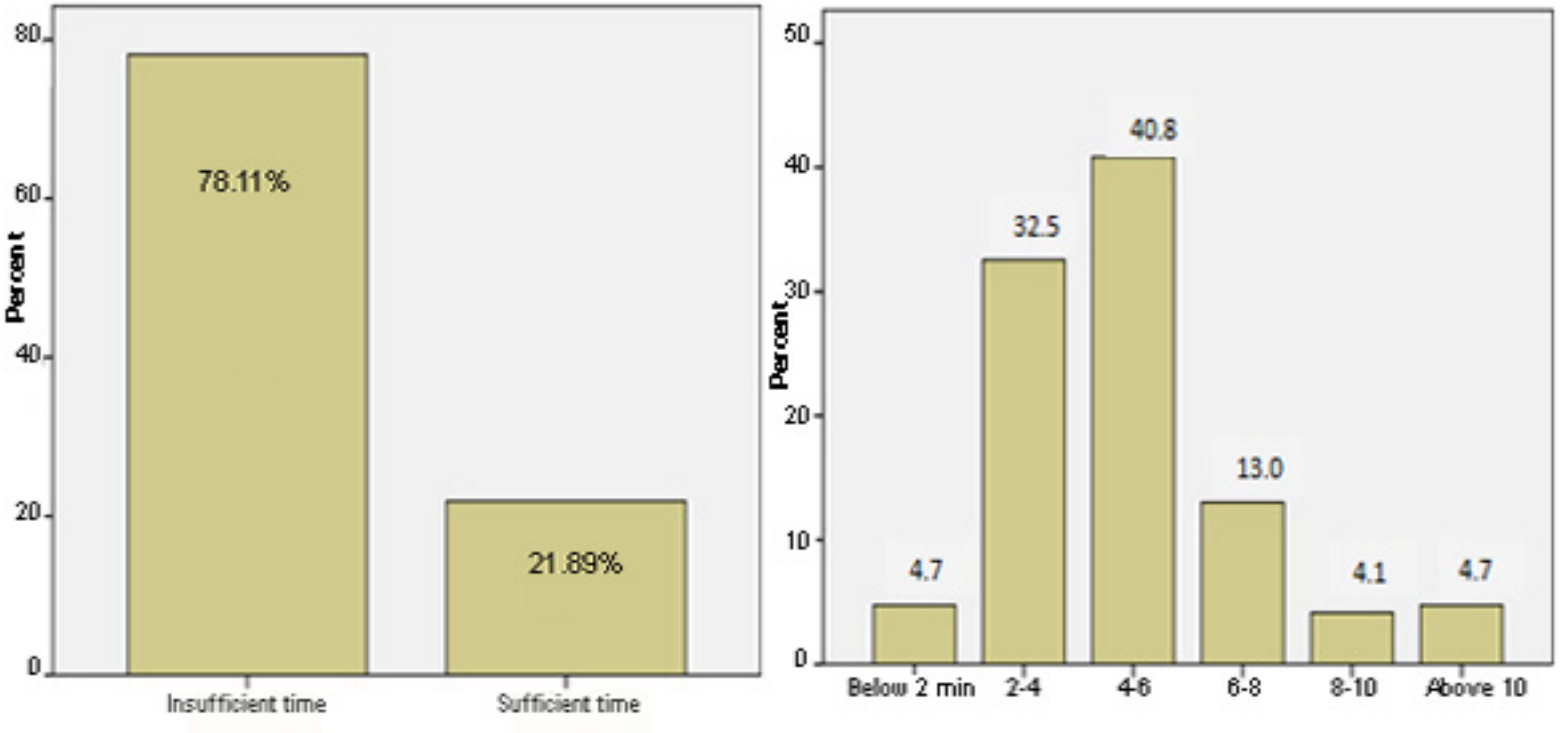
Analysis of time for psychosocial exchange showed that more than three-quarters (78.11%) of consultations had insufficient time (less than 6 minutes). Average consultation time was 5.26 (SD 2.31) minutes. The mean consultation time of Interns and Medical Officers was least (4.36; SD 1.79). The data further showed that 40.8% of the interactions were of 4 - 6 minutes followed by 2 – 4 minutes (32.5%). There were only 4.7% consultations in less than 2 minutes and more than 10 minute intervals respectively.

Senior physicians gave nearly sufficient time (more than six minutes), one-third of junior physicians have practiced it but the majority of physicians composed of Medical Officers have very poor (5.8%) practice of sufficient time.
The mean consultation time was further distributed on the basis of time interval. The 40.8 % (69) of consultations were concluded in four to six minutes followed by 32.5% (55) in two to four minutes whilst 4.7% (8) consultations were wound up in two, or less than two, minutes. About one-fifth (21.8%) of consultation time was more than six minutes.

The average consultation time across working departments was 5.27 (SD 2.306) minutes ranging from 11.83 (Psychiatric) to 2.36 (Anesthesia). Only three departments, namely Psychiatric, Radiology and Pediatric, have achieved sufficient time. Among insufficient consultation time categories; Anesthesia, Dermatology and ENT departments were in the 2 to 4 minutes range, the rest, seven departments scored 4 to 6 minutes range.

The mean time spent for communication (history taking) by Professors is 6.79 (SD 3.0951) minutes followed by Associate Professors (6.26 minutes; SD 1.723), Assistant Professor (5.63; SD 1.687), Lecturer (6.31; SD 2.643) and Medical Officers (4.36; SD 1.795).

Figure 1: Classification of consultation time with cut-off point 6 minutes and interval of consultation time



Discussion

Patients expect to be treated with respect and informed about what patients need to know about their health and diagnosis and its prognosis, during the consultation [17]. The Macy Initiative in healthcare communication has defined three broad skills and behavior of physicians; namely communication with the patient, communication about the patient, and communication about medicine and science [18]. Interpersonal communication skills and practices of physicians sanguinely affect the outcome of healthcare [19]. Studies show that patients attach more importance to the communication skill and behavior of physicians than technical abilities, as studied from patients' perspectives [20-22]. There are also studies that incorporate both physician-defined measures of care and patient satisfaction arguing that both ends of the matter can be seen together while some argue that a single set of measures can be employed to appraise both [23-24].

Every health institution monitors the health workers' communication and behavior that goes beyond the ability to diagnose and treat health problems and addresses a compassionate and a not-impersonal communication to which the educational system has not given a solution as yet [25-26].

Research findings in the literatures have unveiled more importance to empathy, and behavior towards patients' psycho-social problems than biomedical problems as evidenced in patient centered studies [27]. Although this study used only provider defined measuring tools and was not combined with patient-perceived quality measures, the findings still showed similar behavior deficiencies seen in other studies [28-29].

The average range for Medical Officers showed very poor ratings indicating that behavior during interaction was rather poor [30-31]. Ratings for the body section of the checklist appeared poor for all respondents' categories. The explanation section of the checklist scores were barely satisfactory for all categories indicating fair communication efforts by all. The conclusion section of the score showed satisfactory ratings. The assumption inferred from this was that physicians give some attention to reassurance, comfort and imparting hope to their patients at the end of their interaction. The overall score rating showed a clear deficiency in communication skills and behavior [32-33].

The fact that all categories of physicians scored rather dismally in nearly all items of the checklist reflect that due attention has not been given to the communication skill and behavior part of doctors' training [34-35]. As the study was conducted in a teaching hospital, the results obtained showed that medical training as it stands to date does not bear any influence on the communication skill and behavior of physicians and their trainees implying the possibility that the problem may be widespread in medical practice across the nation as a result of the deficiency in the medical curriculum. Mean scores of each group of checklist items analyzed within each category showed no statistically significant variation obviating the fact that the problem is uniform across all categories. However, total score analysis showed that differences in the category means were statistically significant which may be explained by other factors not included in the study.

Although there are no universally agreed upon standard time limits for interaction or physical examination [36-39]; most researchers advocate that more time improves quality of care both from the doctor's and patient's perspectives, while some favor factors associated with doctors' specialty and style of work [39]. The study found average consultation time was 5.26 (SD 2.31) minutes. The senior faculties were practicing above six minutes for consultation but MO's consultation time was shortest. Although, comparison with above studies is not possible owing to the study settings where physician-patients ratio is 1:40, country distinction, health care system characteristics, culture, training and philosophy; the average time is slightly lower for both encounters. In our context, the hospital OPDs are primarily managed by junior faculties including MOs and senior faculties look after referred cases and follow up cases. No matter how good physicians are at assessing, diagnosing and treating biomedical problems; as long as they do not heed the need of imparting their information to the patient and fail to communicate properly; it would be extremely difficult to conclude that patient satisfaction and successful treatment has been achieved.

Conclusion

Effective communication skill is a need in medical practice and is beneficial to patients, caregivers and physicians. The study shows dearth of communication skills and short consultation time primarily among Medical Officers and some junior physicians at PAHS. This can adversely affect patient healthcare and physician contentment. Communication skills are learned. PAHS needs to take action on improvement of the art of communication and proper behavior of concerned physicians. Otherwise, it can have great loss on health outcome and people's trust on care and services of the hospital.

Limitations:
Bias both from the observer and observed would inherently affect outcome, and in the absence of audiovisual cross-check, it would be impossible to ascertain validity. Because of its dichotomous nature, the study could not measure quality. All behaviors in body parts were grossly inappropriate to some clinical outpatient settings. For example ENT, Psychiatric, Ophthalmology, Dental OPDs are less likely to undress while examined. The possibilities lie in other departments as well. Hence, 'where to undress', 'where to put clothes', 'offer gown if genitals need to be exposed', 'lets patient undress privately, if genital needs to be exposed', 'direct patient to get dressed again' and 'lets patient dress privately' are some examples. Patients' educational status, social and economic backgrounds had not been appraised, but are known to affect physicians' behavior towards patients.

Acknowledgments
We express our thanks to PAHS undergraduate medical students of the fourth batch for their support as data enumerators. Our thanks also go to Head of Departments and hospital executives and administrative staff for their support to carry out this study. We would also like to thank all observers without whom this study would not have been possible.

Funding
No funding.

Availability of data and materials
The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Authors' contributions
SP conceived the study, analyzed the data, and drafted the manuscript; SKD, BL participated in the study design and implemented the field investigation; KBGC, AA participated in the study design, analyze data and helped draft the manuscript. All authors contributed to the study and have read and approved the final manuscript.

Ethics approval and consent to participate
The study was approved by the Institutional Review Board of PAHS (med1607081107; 2016-07-08). Study data were de-identified prior to analysis. All study participants provided signed informed consent.

Consent for publication
Not applicable.

Competing interests
The authors declare that they have no competing interests.

References

1. Fox SA, Heritage J, Stockdale SE, Asch SM, Duanue N, Reise SP. Cancer screening adherence: Does physician–patient communication matter? 2009. Patient Education and Counseling 75: 178–184.
2. Nichols LO, Mirvis DM. Physician-patient communication: does it matter? Tenn Med. 1998;91(3):94–6.
3. Rodríguez Torres A, Jarillo Soto EC, Casas Patiño D. Medical consultation, time and duration. Medwave 2018;18(5):e7264
4. Lein C, Wills CE. Using patient-centered interviewing skills to manage complex patient encounters in primary care. 2007. Journal of the American Academy of Nurse Practitioners 19: 215–220
5. Accreditation Council for Graduate Medical Education (ACGME). Advancing Education in interpersonal and Communication Skills (an educational resource outcome Project), 2005.
6. Hatem DS, Barrett SV, Hewson M, Steele D, Purwono U, Smith R. Teaching the medical interview: methods and key learning issues in a faculty development course. J Gen Intern Med. 2007;22(12):1718–24.
7. Dwamena FC, Mavis B, Holmes-Rovner M, Walsh KB, Loyson AC. Teaching medical interviewing to patients: The other side of the encounter. 2009. Patient Education and Counseling 76:380–384
8. Kalet A, Pugnaire M, Cole-Kelly K, Janicik R, Ferrara E, Schwartz M, Lipkin. M, Lazare A. Teaching Communication in Clinical Clerkships: Models from the Macy Initiative in Health Communications, Acad Med 2004;79:511-520.
9. Participants in the Bayer-Fetzer Conference on Physician-Patient Communication in Medical Education. Essential Elements of Communication in Medical Encounters: The Kalamazoo Consensus Statement. Acad Med 2001;76(4):390-393.
10. Colman DR. Bedside manner; A practical guide to interacting with patients. 1st ed. Anchorage: Alaska; 2007.
11. Peterson MC, Holbrook JH, Von Hales D, Smith NL, Staker LV. Contributions of the history, physical examination, and laboratory investigation in making medical diagnoses. West J Med. 1992;156(2):163–5.
12. Lehmann F, Luke C, Andre B, Dennis F. Physician-patient interaction: A reliable and valid checklist of quality. Canadian Family Physician 1990;36:1711-1716.
13. Travaline JM, Ruchinskas R, D'Alonzo GE. Patient-physician communication: Why and how? Journal of American Osteopathic Association (JAOA) 2005;105(1).
14. Ruiz MR, Rodriguez EP, Torres LP, Torre. Physician-patient communication: A study on the observed behaviors of specialty physicians and the ways their patients perceive them; patient Education and Counseling, Elsevier, WWW. elsevier.com/locate/pateducou : 2006;64:242-248.
15. Patan Academy of Health Sciences (PAHS), 2008. www.pahs.edu.np
16. Myriam Deveugele, Anselm Derese, Atie van den Brink-Muinen, Jozien Bensing, Jan De Maeseneer. Consultation length in general practice: cross sectional study in six European countries. BMJ 2002. Vol 325 31
17. Franco CAGS, Franco RS, Lopes JMC, Severo M, Ferreira MA. Clinical communication skills and professionalism education are required from the beginning of medical training - a point of view of family physicians. 2018. BMC Medical Education 18:43 doi.org/10.1186/s12909-018-1141-2
18. Kalet A1, Pugnaire MP, Cole-Kelly K, Janicik R, Ferrara E, Schwartz MD, Lipkin M Jr, Lazare A. Teaching communication in clinical clerkships: models from the macy initiative in health communications. Acad Med. 2004 Jun;79(6):511-20.
19. Jerant A, Hanson B, Kravitz RL, Tancredi DJ, Hanes E, Grewal S, Cabrera R, Franks P. Detecting the effects of physician training in self-care interviewing skills: Coding of standardized patient (SP) visit recordings versus SP post-visit ratings. 2016. Patient Education and Counseling. http://dx.doi.org/10.1016/j.pec.2016.08.021
20. Suzanne MK. Doctor-patient communication: Principles and practices. Canadian Journal of Neurological Sciences 2002;29:523-529.
21. Ashley Duggan (2006) Understanding Interpersonal Communication Processes Across Health Contexts: Advances in the Last Decade and Challenges for the Next Decade, Journal of Health Communication: International

Perspectives, 11:1, 93-108, DOI: 10.1080/10810730500461125
22. Duggan A. Understanding interpersonal communication across health contexts: Advances in the last decade and challenges for the next decade. Journal of Health Communication 2006;11: 93-108.
23. Brown JB, Mccracken EC, Stewart M, Weston WW. Teaching the Patient-Centered Clinical Method in Primary Care: A Program for Community Physicians. 1992. The Journal of Continuing Educarion in the Health Professions, Vol 12, pp. 181-186
24. Di Matteo MR, Di Nicola D. Sources of assessment of physician performance; A study of comparative reliability and patterns of interaction. Med Care 1981;19:829.
25. Smith PC, Mossialos E, Papanicolas I. Performance measurement for health system improvement: experiences, challenges and prospects. 2008 World Health Organization, on behalf of the European Observatory on Health Systems and Policies (http://www.euro.who.int/pubrequest)
26. Coiera E. Communication Systems in Healthcare. Clin Biochem Rev 2006 Vol 27
27. Jeffrey D. Empathy, sympathy and compassion in healthcare: Is there a problem? Is there a difference? Does it matter? Journal of the Royal Society of Medicine; 2016, Vol. 109(12) 446–452 DOI: 10.1177/0141076816680120
28. Ha FJ, Longnecker N. Doctor-Patient Communication: A Review. The Ochsner Journal 10:38–43, 2010
29. Butalid, L, Bensing, JM, Verhaak, PF. Talking about psychosocial problems: an observational study on changes in doctor–patient communication in general practice between 1977 and 2008. Patient Education and Counseling: 2014, 94(3), 314-321
30. Arora N. Interacting with cancer patients: the significance of physicians' communication behavior. Soc Sci Med. 2003;57(5):791–806.
31. Tongue JR, Epps HR, Forese LL. Communication skills for patient centered care: research-based, easily learned techniques for medical interviews that benefit orthopedic surgeons and their patients. J Bone Joint Surg Am. 2005;87:652–658.
32. Jalil A, Zakar R, Zakar MZ, Fischer F. Patient satisfaction with doctor-patient interactions: a mixed methods study among diabetes mellitus patients in Pakistan. BMC Health Services Research. 2017: 17:155 DOI 10.1186/s12913-017-2094-6
33. Roberts MJ, Campbell JL, Abel GA, Davey AF, Elmore NL, Maramba I, Carter M, Elliott MN, Roland MO, Burt JA. Understanding high and low patient experience scores in primary care: analysis of patients' survey data for general practices and individual doctors. BMJ 2014;349:g6034 doi: 10.1136/bmj.g6034
34. Ranjan P, Kumari A, Charkrawarty A. How can Doctors Improve their Communication Skills? Journal of Clinical and Diagnostic Research. 2015 Mar, Vol-9(3): JE01-JE04
35. Perera H.J.M. Effective Communication Skills for Medical Practice. Journal of the Postgraduate Institute of Medicine 2015; 2:E20:1-7 doi: http://dx.doi.org/ 10.4038/jpgim.8082
36. Ortona PK, Gray DP. Factors influencing consultation length in general/family practice. Family Practice, 2016, Vol. 33, No. 5, 529–534 doi:10.1093/fampra/cmw056
37. Tai-Seale M, McGuire TG, Zhang W. Time Allocation in Primary Care Office Visits. Health Services Research Trust 2007: 42:5. DOI: 10.1111/j.1475-6773.2006.00689.x
38. Elmore N, Burt J, Abel G, Maratos FA, Montague J, Campbell J, Roland M. Investigating the relationship between consultation length and patient experience: a cross-sectional study in primary care. British Journal of General Practice, Online First 2016 (retrieved from https://bjgp.org/content/bjgp/early/2016/10/24/bjgp16X687733.full.pdf)
39. Irving G, Neves AL, Dambha-Miller H, Oishi A, Tagashira H, Verho A, Holden J. International variations in primary care physician consultation time: a systematic review of 67 countries BMJ Open 2017; 7:e017902. doi:10.1136/bmjopen-2017-017902

Middle East Journal of Family Medicine / World Family Medicine
medi+WORLD International 2019