Satisfaction levels experienced by Ventricular Septal Defect patients aged 18-30 years-old at Ribat University Hospital in regards to their doctor's communication skills between November 2021 and December 2021

Ahmed Omer Elsadig, Ayat Mussa, Ahmed Abd Elnasser, Mustafa Moneir Diab, Hassan I. Osman 1

[a] *hassanismail603@gmail.com*

Napata College, Khartoum North, Khartoum, Sudan

Abstract

Introduction: The World Health Organization (WHO) defines counselling as 'a well-focused process, limited in time and specific, which uses the interaction to help people deal with their problems and respond in a proper way to specific difficulties in order to develop new coping strategies. A doctor-patient relationship formed when a doctor attends to a patient's medical needs and this relation built on trust, respect, communication and a common understanding of both doctor and patients'. As a patient, being counseled in a good manner enables you to obtain sufficient information about your health problem, symptoms and available treatment, then how to deal properly and cope with the disease. **Research Methodology:** This is a descriptive hospital-based cross-sectional study. **Results:** 7% considered their doctor to be very rude '8-10', while 27% considered their doctor to be kind '1-3'. The remainder 66% were rather neutral, assessing their doctors at between 4 and 7 on the 'rudeness' scale. 85% answered 'yes' when asked if their doctors explained their illness to them. Most of those (78%) were very satisfied with their doctors' explanation, 3% were very dissatisfied with it and 10% were neutral on the topic. 100% of our participants answered 'Yes' when asked if their doctors explained the function(s) of their medication. 100% were very satisfied with the aforementioned explanation. 26% of our participants had only been with one doctor, 74% had seen at least 2 doctors in their lifetime. Despite this, only 7% of them had changed doctors due to them not liking the way their doctors treated them. The findings were consistent with data pertaining to the education of parents of children with VSD. Conclusion: **Conclusion**: our research showed that patients were not very knowledgeable in regards to their illness. It also showed that not enough medical doctors sufficiently teach their patients of their illness.

Keywords: VSD; Councelling; Sudan

Introduction/Background:

The World Health Organization (WHO) defines counselling as 'a well-focused process, limited in time and specific, which uses the interaction to help people deal with their problems and respond in a proper way to specific difficulties in order to develop new coping strategies. A doctor-patient relationship formed when a doctor attends to a patient's medical needs and this relation built on trust, respect, communication and a common understanding of

both doctor and patients' (1). As a patient, being counseled in a good manner enables you to obtain sufficient information about your health problem, symptoms and available treatment, then how to deal properly and cope with the disease. The United States' Center for Disease Control (CDC) defines ventricular septal defect (VSD) as 'a birth defect of the heart in which there is a hole in the wall (septum) that separates the two lower chambers (ventricles) of the heart.' (2).

Symptoms of VSD include decreased oral intake, failure to thrive, increased respiratory rate, and fatigaubility. (3)

VSD carries a high morbidity rate and is a burden on both the family and the patient. There has been an observation that counselling is poor in Sudan, ergo, we thought it appropriate that these 2 are looked into so that we know where we, as a nation, stand. Data from a US-based study indicated that the 'most common CHD [Congenital Heart Defect] were muscular ventricular septal Defect [and] perimembranous ventricular septal defect'. If this is indicative of anything, it indicates that VSDs are of the upmost importance and are rather common as a CHD.

Objectives

General: To assess the satisfaction levels experienced by Ventricular Septal Defect (VSD) patients aged 18-30 years-old at Ribat University Hospital in regards to their doctor's communication skills between December 2021 and February of 2022

Specific:

>To assess the relationship between good counseling and good prognosis of disease

>How good communication ends up to good counseling and enhance doctor-patient relationship.

What is VSD?

The septum is composed of a mixture of mesenchymal and muscular components (4). The AV and conotruncal endocardial cushions fuse, this fusion results in the bringing forth of the mesenchymal element (5). In so far as the muscular component is concerned, there is no agreed upon theory, despite one theory seeming rather likely, as per a 2011 paper 'Some researchers postulate that the muscular septum forms from coalescence of the part of the ventricular wall that is interposed between the enlarging free walls of the developing right and left ventricles, therefore, as the ventricular cavities become deeper the septum grows passively inwards' (5,6). Another theory that holds merit is the one that states that the muscular component originates from the primitive interventicular septum, which is believed to move towards the AV canal cushions (5).

Literature Review:

"A physician shall uphold the standards of professionalism, be honest in all professional interactions, and strive to report physicians deficient in character or competence, or engaging in fraud or deception, to appropriate entities" (7)

Authors of a Chinese study defined patient satisfaction as ‘a measure of the extent to which a patient is content with the healthcare they received from their healthcare provider’ (8). For an illness accounting for ~40% of all reported cardiac malformations of a congenital nature (5), it is important that counselling is properly done.

Data is indicative of ‘personal’ care of patients seeming to result in improved overall patient satisfaction (9). Despite the topic being unrelated, we believe the data is of use, as per a 2002 paper ‘written exercise prescriptions could further improve the effect of these interventions.’ (10). This could be used as specialists could physically write out (or print) their instructions for parents and the patient in a language that would make sense to them as opposed to overwhelming them with information in visits or leaving them to scour the internet or other sources where information may be flawed.

Epidemiology

It is extremely difficult to accurately pinpoint the epidemiology of the illness as its pathophysiology is complicated and many patients are asymptomatic. Many VSDs close with time, this also results in variance of reported cases around the globe (5).

Data from color doppler echocardiography screening conducted in 1995 reported a prevalence rate of ~5% of VSD amongst newborns (11).

Despite this, there is reason to believe that there is a higher prevalence rate as reports that relied on echocardiography reported higher incidences of VSD compared to those that relied primarily on clinical examination (12,13).

Associated Illnesses

There is reason to believe that there exists an association between VSD and a number of congenital malformations; this list includes (in no particular order):

i) Tetralogy of Fallot,
ii) Transposition of the great arteries,
iii) Congenitally corrected transposition,
iv) Aortic Coarctation,
v) Aortic interruption
vi) Univentricular atrioventricular connection (5)

Furthermore, a number of genetic syndromes seem to be associated with VSD (such as Trisomy 21, Trisomy 13 and Trisomy 18) (14).

A well-established complication/manifestation (reported as early as 1933) of VSD is Aortic Regurgitation (AR), which occurs due to prolapse of the aortic valve (15). This phenomenon is also known as Laubry-Pezzi syndrome (15).

A 2018 Singapore-based paper reported a significantly increased risk of Infective Endocarditis (IE) in VSD patients (16).

Despite a number of complications associated with VSD manifesting themselves here, it is important to note that VSD itself can be a complication, for example, of myocardial infarction (MI) (17) (this is usually

managed by first ensuring hemodynamic stability, followed by surgery at a later point in time) (18).

Management of VSD

Not all patients are fit for surgery; in fact, in some of them, surgery is found to be counterproductive. These patients are considered for Transcatheter Aortic Valve Replacement (TAVR) (19). More recently, almost all VSD patients are considered for TAVR as recent reports seem rather promising (20). As per an article published in NEJM 'In patients with severe aortic stenosis who were at low surgical risk, TAVR with a self-expanding supraannular bioprosthesis was noninferior to surgery with respect to the composite end point of death or disabling stroke at 24 months.' (21).

As per a 2007 paper regarding the management of VSD in infants 'Primary repair of infants with Coarctation and VSD using a one-stage approach through separate incisions affords excellent clinical results.'(22).

Issues That Face Adults

Despite the existence of a VSD, if it is small enough, and is not associated with pulmonary hypertension, a patient may be able to tolerate exercise normally, even into adulthood (23). The same seems to be manifest in so far as pregnancy is concerned (i.e. women are at no higher risk if they suffer from a small VSD without pulmonary hypertension) (24)

Methods of counselling

It is rather clear, using available data, that the act of regurgitating information to the public is not, on its own, enough to ascertain your advice being followed as intended (25).

Ever since 2019, the world has been overwhelmed with COVID-19, an illness which resulted in a number of disturbances to our way of life (26). One of the ways technology has aided us to adapting to the change forced upon us by COVID-19 is by the providing virtual means of communication, such as WeChat. Researchers in China looked into the effects of using WeChat to aid them in perioperative education of parents of children 'who underwent transthoracic device closure of ventricular septal defects (VSDs).' (27). They reported the following: 'Perioperative health education for parents of children who undergo transthoracic device closure of VSDs through the WeChat platform can effectively enhance parents' knowledge of care, improve parent satisfaction, which is an effective method to ensure convenient operation and reduce loss to follow-up.' (27).

As per a 2020 paper, 'after fetal diagnosis of CHD, [parents] need uninterrupted counseling of adequate duration and quality in a separate counseling room. Providing additional written information or links to adequate web sources after initial counseling seems necessary. High risk CHD needs more attention for counseling. There is a trend towards more counseling success if provided by cardiologists' (28)

Research Methodology

This is a descriptive hospital-based cross-sectional study conducted Ribat University Hospital. Burri, Khartoum, Khartoum, Sudan between November and December of 2021. Data was collected via researcher-administered questionnaires using random systemic sampling.

Sample size was calculated using Taro Yamane's formula $\boldsymbol{n = N/(1 + N(e)^2.}$ Where: n = sample size, N= total population, and e = degree of precision. This totaled 100.

Results:

Our results showed that patients of the younger age group (18-23) were more knowledgeable regarding VSD than their comparatively elder counterparts (24+).

There was a significant correlation between the patients' socioeconomic level and their knowledge of their illness (those found to be of a 'higher' socioeconomic status possessed more knowledge of how VSD manifests itself as opposed to those deemed to be of a 'lower' socioeconomic status), the same was found to be true in regards to the patients' educational level (those with higher levels of education were found to be better knowledgeable of their illness).

53 of our 100 participants were male, while the remainder 47 were female.

Most (72%) were between the ages of 18 and 23, and were diagnosed between birth and 5 years of age (64%). None of our participants were diagnosed with VSD post the age of 15. 82% of our participants held a secondary education (high school) degree. 14% held post-secondary degrees, while 4% had only primary education. 67% were found to have an income of under 100,000 SDG per month. 27% had a monthly income between 100,001 and 300,000 SDG per month, while only 6% of our participants had an income of over 300,000 SDG a month.

In so far as the patients views in regards to their doctor's 'rudeness' towards them, only 7% considered their doctor to be very rude '8-10', while 27% considered their doctor to be kind '1-3'. The remainder 66% were rather neutral, assessing their doctors at between 4 and 7 on the 'rudeness' scale.

85% answered 'yes' when asked if their doctors explained their illness to them. Most of those (78%) were very satisfied with their doctors' explanation, 3% were very dissatisfied with it and 10% were neutral on the topic.

100% of our participants answered 'Yes' when asked if their doctors explained the function(s) of their medication. 100% were very satisfied with the aforementioned explanation.

26% of our participants had only been with one doctor, 74% had seen at least 2 doctors in their lifetime. Despite this, only 7% of them had changed doctors due to them not liking the way their doctors treated them.

Conclusions + Recommendations:

In conclusion, our research showed that patients were not very knowledgeable in regards to their illness. It also showed that not enough medical doctors sufficiently teach their patients of their illness.

Based on these findings, the following can be recommended:

i) The use of echocardiography screening in newborns in areas with high levels of reported VSD.
ii) The exploitation of virtual communication technologies to aid in the education process regarding VSDs.
iii) The invitation of experts on the topic in public platforms and allowing them to discuss their topic of knowledge so as to see to it that more trustworthy information is available to the public.
iv) Teaching of communication skills courses in medical schools and insistence upon the student showing the ability to convey information to patients in a manner understandable to them.
v) Positive work towards increasing the ratio of doctors to patients so as to see to it that the doctors are provided better time per patient.
vi) The introduction of motivational payment plans for doctors so that younger individuals find themselves motivated to join medicine.
vii) The conduction of research in Sudan regarding VSD, counselling, and VSD counselling.

List of References:

1. WHO. Counseling [Internet]. [cited 2021 Nov 29]. Available from: https://www.who.int/
2. CDC. Facts about Ventricular Septal Defect [Internet]. [cited 2022 Jan 1]. Available from: https://www.cdc.gov/ncbddd/heartdefects/ventricularseptaldefect.html
3. Mayo Clinic Staff. Ventricular septal defect (VSD) [Internet]. 2021 [cited 2022 Jan 1]. Available from: https://www.mayoclinic.org/diseases-conditions/ventricular-septal-defect/symptoms-causes/syc-20353495
4. Contreras-Ramos, A, Sánchez-Gómez C, García-Romero H, Cimarosti L. Normal development of the muscular region of the interventricular septum: I—signifi cance of the ventricular trabeculations. Anat Histol Embryol. 2008;37:344–51.
5. Penny DJ, Vick GW. Ventricular septal defect. The Lancet. 2011;377(9771):1103–12.
6. Goor A, Edwards E, Lillehei W. The development of the interventricular septum of the human heart: correlative morphogenetic study. Chest. 1970;58:453–67.
7. Swaiman KF;, Ashwal S;, Ferriero DM, Schor NF. Swaiman's Pediatric Neurology—E-Book: New York, NY: Principles and Practice; Elsevier Health Sciences; 2011.
8. Manzoor F, Wei L, Hussain A, Asif M, Shah SIA. Patient satisfaction with health care services; an application of physician's behavior as a moderator. International Journal of Environmental Research and Public Health. 2019;16(18):1–16.
9. Cleary P, McNeil B. Patient satisfaction as an Indicator of Quality Care. Inquiry. 1988;25:25–36.
10. Petrella RJ, Lattanzio CN. Does counseling help patients get active? Canadian Family Physician. 2002;48:72–80.

11. Roguin N, ZD D, Barak M, Nasser N, Hershkowitz S, Milgram E. High prevalence of muscular ventricular septal defect in neonates. J Am Coll Cardiol. 1995;26:1545–48.

12. Hoffman J, Kaplan S. The incidence of congenital heart disease. J Am Coll Cardiol. 2002;39:1890–900.

13. Hoffman J, Kaplan S, Liberthson RR. Prevalence of congenital heart disease. Am Heart J. 2004;147:425–39.

14. Nurse AG, Jeans PC, Wright FH, Blake FG. Essentials of Pediatrics. 7th ed. Vol. 55, The American Journal of Nursing. Philadelphia, PA, USA: Elsevier Saunders; 2015.

15. Sbizzera M, Pozzi M, Cosset B, Koffel C, Obadia JF, Robin J. Long-term complications after surgical correction of Laubry-Pezzi syndrome. Journal of Thoracic Disease. 2016;8(3):E232–4.

16. Lee PT, Uy FM, Foo JS, Tan J Le. Increased incidence of infective endocarditis in patients with ventricular septal defect. Congenital Heart Disease. 2018;13(6):1005–11.

17. Labrousse L, Choukroun E, Chevalier JM, Madonna F, Robertie F, Merlico F, et al. Surgery for post infarction ventricular septal defect (VSD): Risk factors for hospital death and long term results. European Journal of Cardio-thoracic Surgery. 2002;21(4):725–32.

18. Suder B, Janik Ł, Wasilewski G, Konstanty-Kalandyk J, Sadowski J, Kapelak B, et al. Post-myocardial infarction ventricular septal defect. Is it better to operate on a fresh infarction or to wait? A case study. Kardiochirurgia i Torakochirurgia Polska. 2016;13(1):39–41.

19. Sagheer S, Prejean S, Watts T, Law MA, Ahmed MI. Percutaneous Closure of Iatrogenic VSD and Paravalvular Leak: Two Complications of TAVR. Cardiovascular Revascularization Medicine. 2021;28(xxxx):75–7.

20. Pontailler M, Gaudin R, de Bellaing AM, Raisky O. Surgical repair of concomitant ventricular septal defect and aortic cusp prolapse or aortic regurgitation, also known as the Laubry-Pezzi syndrome. Annals of Cardiothoracic Surgery. 2019;8(3):438–40.

21. Popma JJ, Deeb GM, Yakubov SJ, Mumtaz M, Gada H, O'Hair D, et al. Transcatheter Aortic-Valve Replacement with a Self-Expanding Valve in Low-Risk Patients. New England Journal of Medicine. 2019;380(18):1706–15.

22. Kanter KR, Mahle WT, Kogon BE, Kirshbom PM. What is the Optimal Management of Infants With Coarctation and Ventricular Septal Defect? Annals of Thoracic Surgery. 2007;84(2):612–8.

23. Deanfield J, Thaulow E, Warnes C. for the Task Force on the Management of Grown Up Congential Heart Disease of the European Society of Cardiology. Management of grown up congenital heart disease. In: Eur Heart J. 2003. p. 1035–84.

24. Bédard E, Dimopoulos K, Gatzoulis M. Has there been any progress made on pregnancy outcomes among women with pulmonary arterial hypertension? Eur Heart J. 2009;30:256–65.

25. Adnan S., et. al. PERCEPTION OF PHYSICIANS REGARDING PATIENT COUNSELING BY PHARMACIST: A BLEND OF QUANTITATIVE AND QUALITATIVE INSIGHT. *International Journal of Pharmacy & Therapeutics*, 5(2), 2014, 117-121.

26. I. Osman H, Elmamoun M, A. Elgamel A. The COVID-19 situation in Sudan. Plus, a possible life-saving intervention? International Journal of Research Publications. 2020;61(1).

27. Zhang QL, Xu N, Huang ST, Chen Q, Cao H. Effect of using the WeChat platform on the perioperative health education of parents of children who underwent transthoracic device closure of VSDs. Journal of Cardiothoracic Surgery. 2020;15(1):1–6.

28. Kovacevic A, Simmelbauer A, Starystach S, Elsässer M, Müller A, Bär S, et al. Counseling for Prenatal Congenital Heart Disease—Recommendations Based on Empirical Assessment of Counseling Success. Frontiers in Pediatrics. 2020;8(February):1–8.