



Original Research

Prevalence of Congenital Heart Disease by Mercy Organization for Childhood Health N. GO/ IRAQ

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Abstract:

Background: Congenital heart disease (CHD) is the commonest birth defect worldwide, CHD accounts for 28% of all birth defects. The objective of current study the prevalence of CHD among children aged between 1-18yr.s old in different province in Iraq.

Methods: The prevalence and pattern of CHD was studied, taking into consideration age, gender & distribution. Total children examined through 53 medical campaigns (2284). was Place of examination No of child examined. Including Orphans homes, school children, Primary health care center, special need centers (Autism, Down syndrome, Cerebral palsy) in variable provinces (Baghdad Karbala, Wasat, Anbar). Study conducted between 1st July 2021 till 30th January 2023. All children (2284) were examined by of doctors of different specialty (Pediatric Echocardiography, Pediatrician Family Medicine, Emergency Medicine, Community Medicine Anesthists).

Results: This study finding (2194) child were normal. while 90 were having CHD. The study also showed a significantly higher prevalence of CHD among male with a male-to-female ratio of 1.06:1, while was the Male were male 1107, Female 1176. The distribution of participant according to CHD Was 93 (4%), Female constitute 1315 (58%), while Male constitute 42% (969). The most age group participated in the study was between 1-5yr.s was 930, (40.7%) (26 were CHD) followed by age group from 6-10yr.s was 415 (18.1 %) (29 wee CHD).

Conclusion: This study concluded that the It is 1st study of screening CHD done by organization Showing that echocardiography is important tool for early diagnosis of CHD which can be missed easily.

Key words: Prevalence, Congenital Heart Disease, Childhood Health.

Introduction:

Congenital heart disease (CHD) is the commonest birth defect worldwide, CHD accounts for 28% of all birth defects⁽¹⁾. Congenital heart disease, also called a defect, refers to one or more problems with the heart structure that are present at birth. These abnormalities occur when the heart or blood vessels don't form correctly in utero. At least eight out of every 1000 infants born in the US each year have a heart defect. CHD is typically defined as a structural abnormality of the heart and/or great vessels that is present at birth⁽²⁾. In 1950's CHD was fatal disease before introduction of cardiopulmonary bypass and Diagnostic and Treatment capability for CHD have dramatically improved over the past 80yr.s⁽³⁾. The reported total CHD birth prevalence increased substantially, from <1 per 1,000 live births in 1930 to 9 per 1,000 live births in recent years. With a worldwide annual birth rate around 150 million births, this corresponds to 1.35 million live births with CHD every year, representing a major public health issue⁽⁴⁾. The objective of current study the prevalence of CHD among children aged between 1-18yr.s old in different province in Iraq and the study conducted via. Comprehensive screening of CHD for children between <1yr - 18yr.s old Via Free medical Campaigns in Iraq

Materials and Methods:

The prevalence and pattern of CHD was studied, taking into consideration age, gender & distribution. Total children examined through 53 medical campaigns (2284). was Place of examination No of child examined. Including Orphans homes, school children, Primary health care center, special need centers (Autism, Down syndrome, Cerebral palsy) in variable provinces (Baghdad Karbala, Wasat, Anbar). Study conducted between 1st July 2021 till 30th January 2023. All children (2284) were examined by of doctors of different specialty (Pediatric Echocardiography, Pediatrician Family Medicine, Emergency Medicine, Community Medicine Anesthists). All subjected for general examination (looking for cyanosis other congenital malformation) cardiac auscultation, All were examined By cardiac echocardiography

(Echocardiography machine was GE healthcare & Vino 6 using Phase array probe 2.5-5MHZ transducer. The examination protocol included two-dimensional and color Doppler imaging. CWD from the parasternal, suprasternal, subxiphoid and, when necessary, modified views. Data are presented as mean $\pm$ SD. The prevalence of CHD was based on the number of CHD cases divided by the total number of children who came to the events. To eliminate the impact of non-normal distribution, we correlated the prevalence of echocardiographic abnormality, the age distribution, and time using the Kendall tau rank correlation coefficient. A p-value of <0.05 was considered to be significant. Statistical analysis was performed using SPSS statistical package version 20.0 (SPSS Inc., Chicago, IL, USA).

Results:

The study was conducted to show the pattern and prevalence of CHD in Iraqi population which seem to be higher than other countries. This is 1st study conducted in Iraq by N.G.O organization (mercy organization for childhood health) & the 1st study done in different prominence & multi institute in Iraq shown in table 1.

The prevalence of CHD in this study was 4% as shown in figure 2. The study also showed relatively higher prevalence of CHD among male with a male-to-female ratio of 1.06:1. Female constitute 58% (1315), while Male constitute 42% (969) as shown as figure 1.

The most age group participated in the study was between 1-5yr.s was 40.7% (930), (26 were CHD) followed by age group from 6-10yr.s was 18.1% (415). (29 were CHD) as shown in figure 3.

The CHD were more commonly found in age group 15-20yr.s 13 cases (8%), then 6-10yr.s CHD cases were 29 (6.9%) 1-11mn.s age group 8 cases (6%) figure 3.

Types of CHD diagnosed by Echocardiography, the most common CHD was ASD 27% (24), VSD 24 (20), 9 (10%) Complete Av canal, TOF as shown in Table 2 & figure 4.

The participant with syndromes 40% were deaf & mut, 30% were Autism, 27% were down

syndrome .the prevalence of CHD in deaf & mut children 4.3% followed by Autism (3%), Down syndrome (3.2%) as shown in figure 5.

Echocardiography images of some congenital heart diseases shown in Figure(6).

Table (1): Distribution of participants according to province and institutes

Province –Iraq	institute	No of Children examined	CHD
Baghdad	Orphan home	610(26,7%)	21(3.4%)
Baghdad	Primary health care	543(23.7%)	21(3.8%)
Baghdad	Special need institutes	463(20.2%)	18(3.8%)
Baghdad	Church	230(10%)	6(2.6%)
Baghdad	Schools	230(10%)	2(0.8%)
Wasat	Wasat pediatric hospital	84(3.6%)	28(33%)
Karbella	Karbella pediatric hospital	72(3.1%)	5(6%)
Anbar	Immigrants	32(1.4%)	0(0%)
Other Province		20(0.8%)	8(4%)
Total		2284	109(4%)

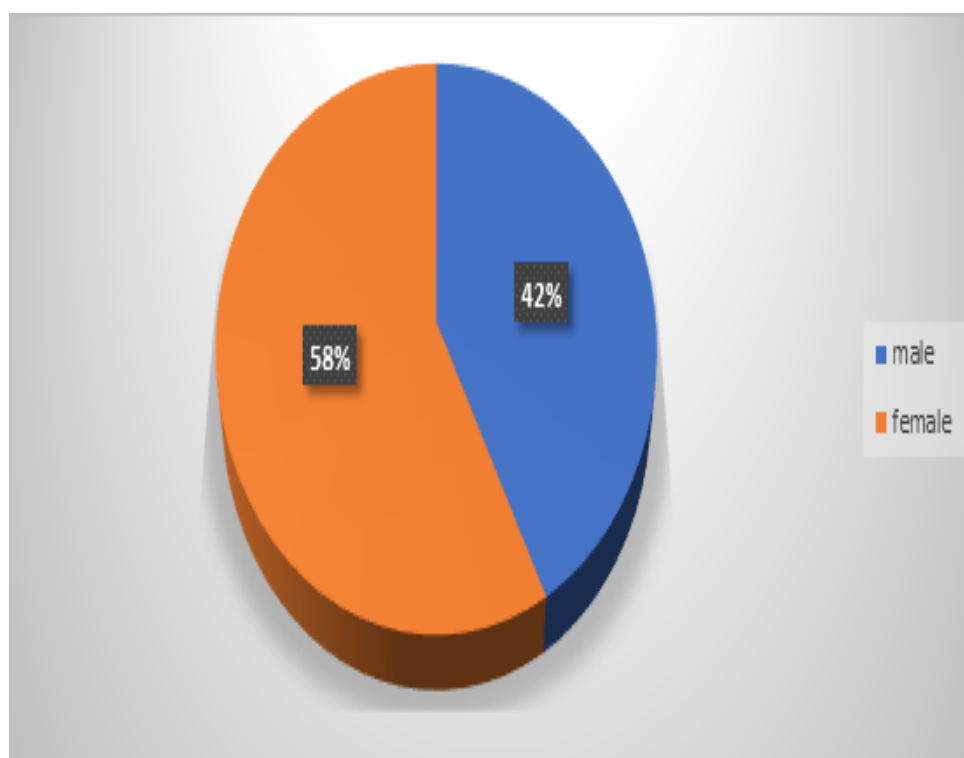


Figure (1): Distribution of the participants according to the Gender

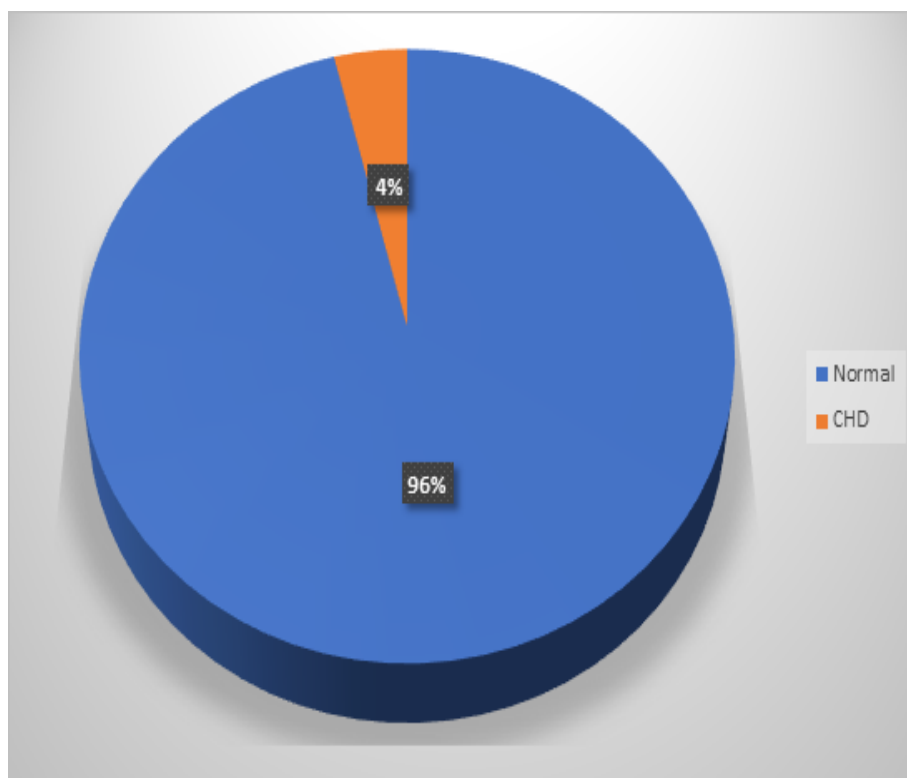


Figure (2): Distribution of the participants according to the CHD

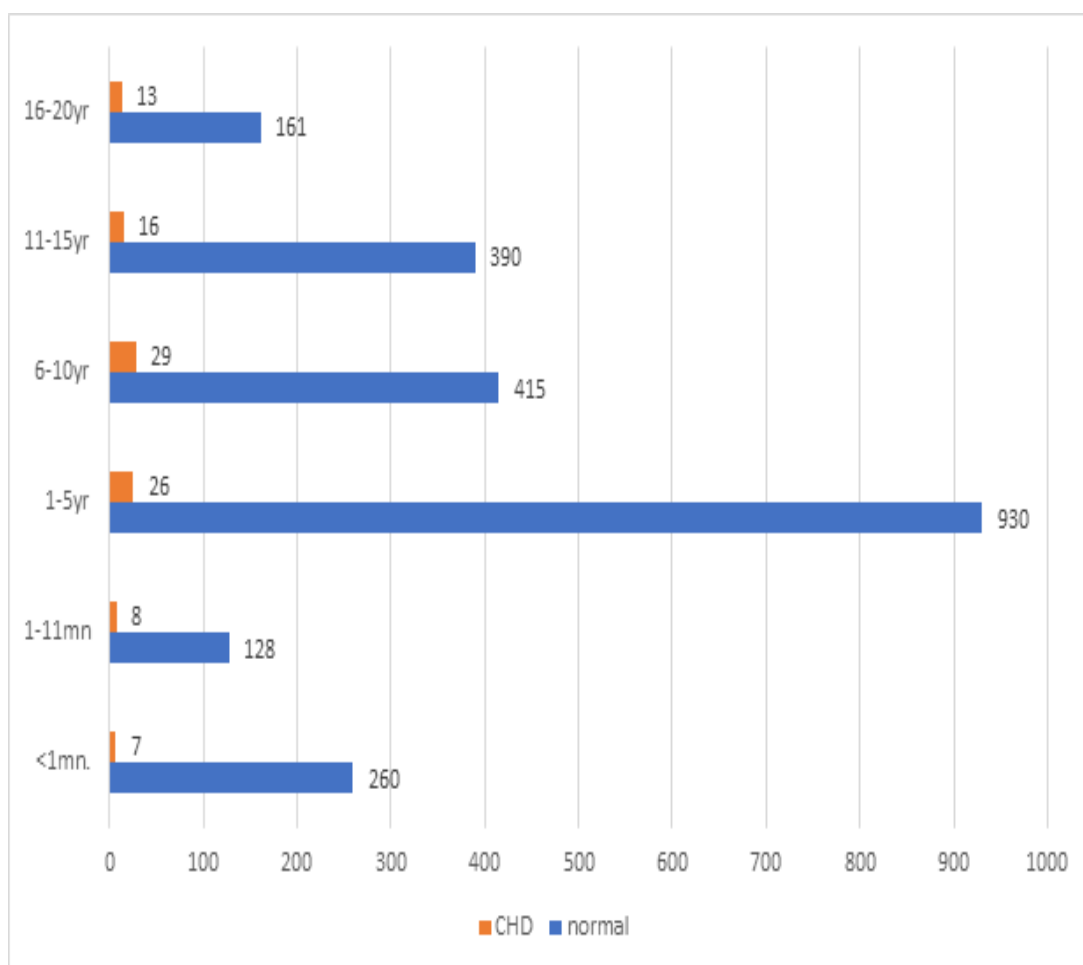
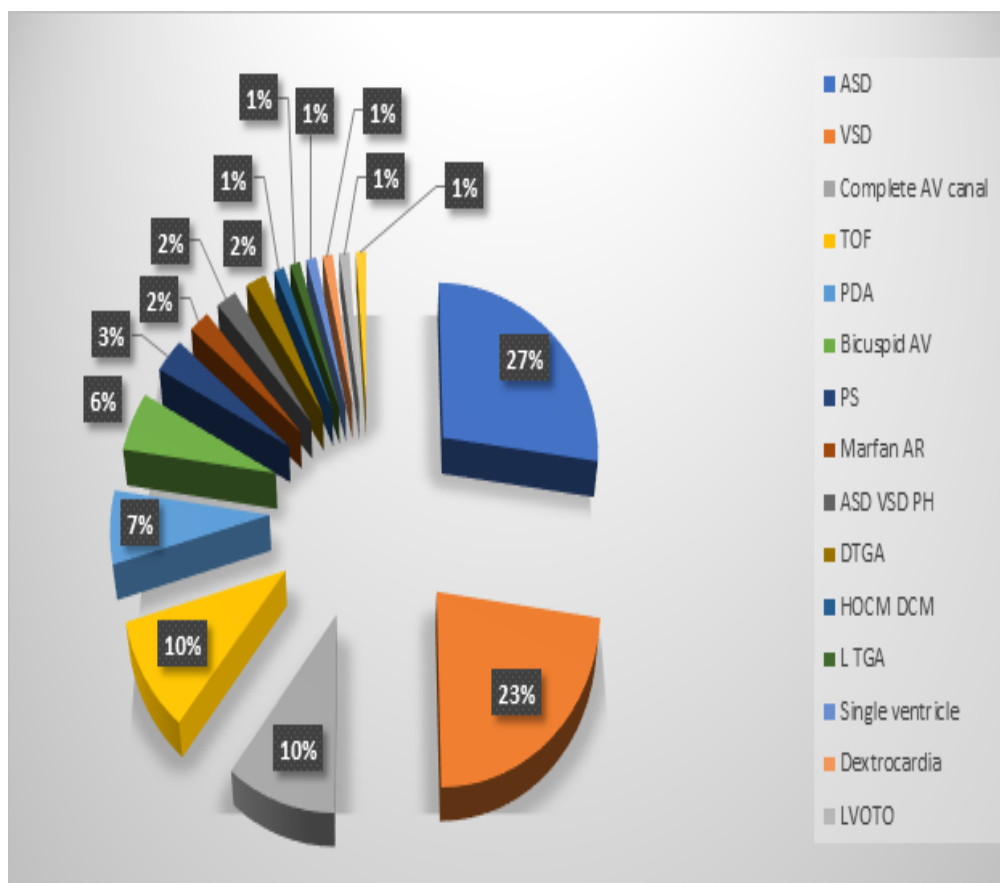


Figure (3): Distribution of CHD among participants

Table (2): Distribution of participants according to types of CHD

Defect	No	%
Atrial septal defect (ASD)	24	27
Ventricular septal defect (VSD)	20	23
Complete AV canal	9	10
Tetralogy of Fallot (TOF)	9	10
Patent Ductus arteriosus (PDA)	6	7
Bicuspid AV	5	6
Pulmonary stenosis (PS)	3	3
Marfan aortic valve regurgitation (AR)	2	2
Atrial septal defect Ventricular septal defect pulmonary hypertension (ASD VSD PH)	2	2
D transposition of great arteries (D TGA)	2	2

Figure (4): Distribution of the participants according to the type of CHD

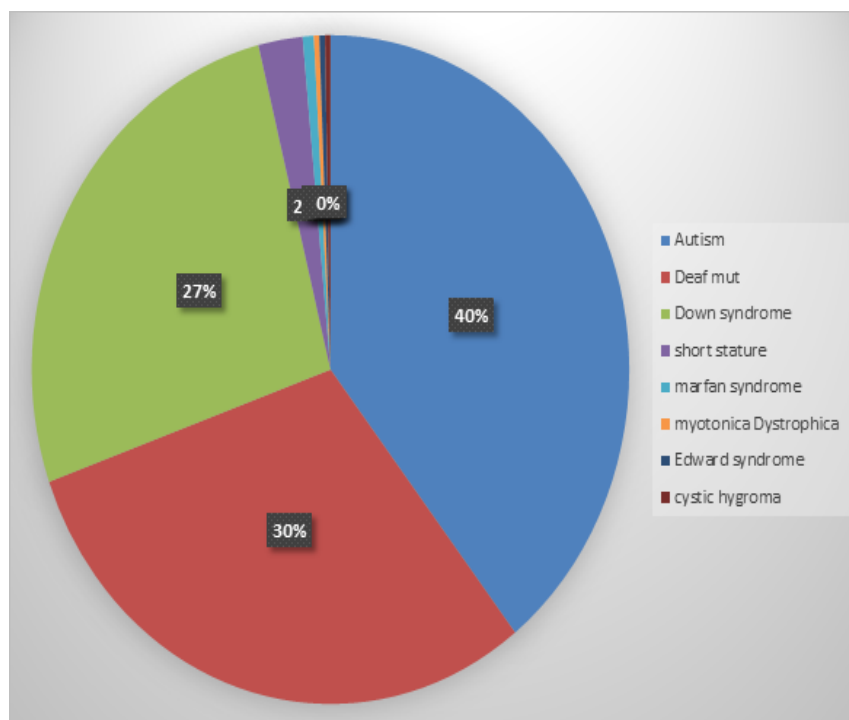


Figure 5: Distribution of participants according to associated syndrome

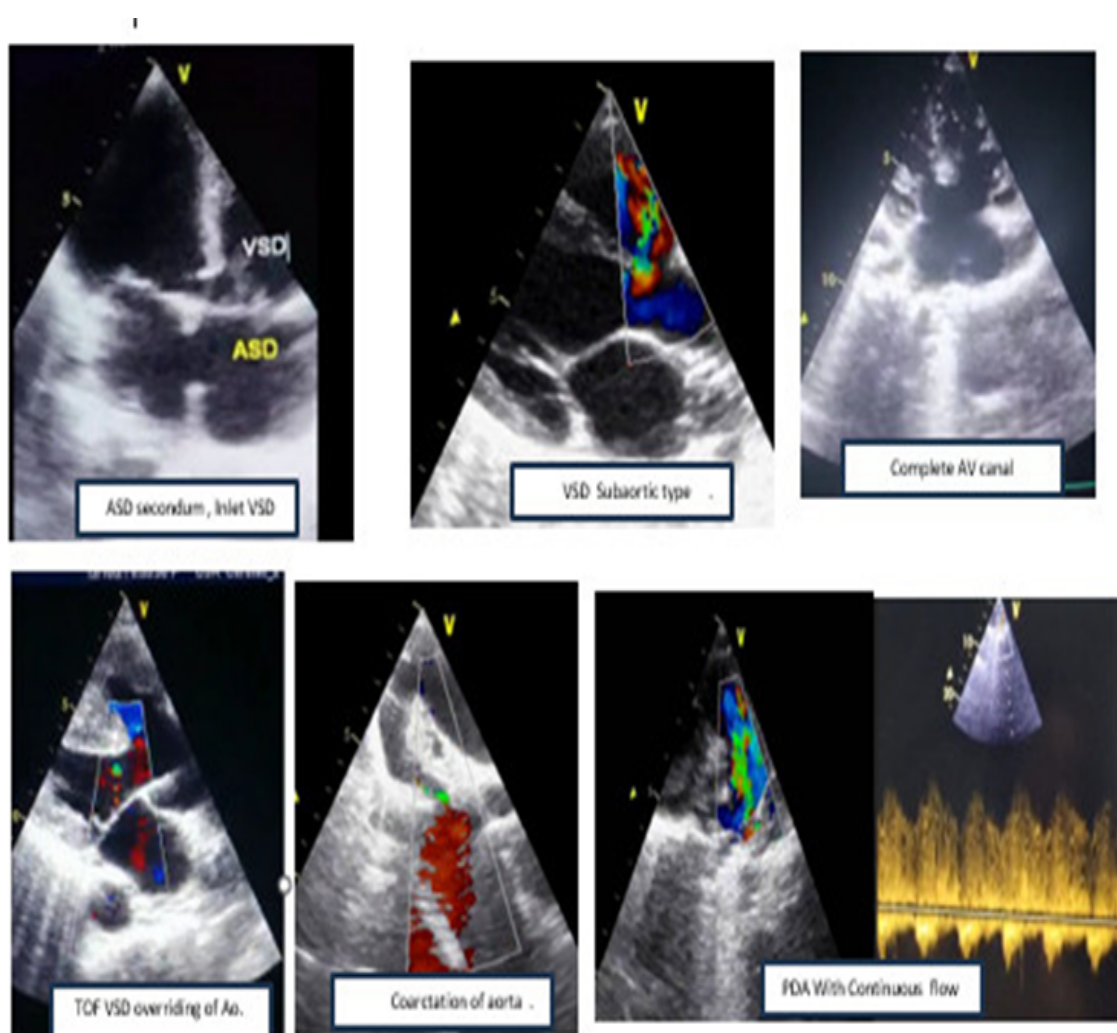


Figure (6): Shows Echocardiography images of some congenital heart diseases

Discussion:

The study was conducted to show the pattern and prevalence of CHD in Iraqi population which seem to be higher than other countries .This is 1st study conducted in Iraq by N.G.O organization (mercy organization for childhood health) .& the 1st study done in different prominence & multi institute in Iraq. The prevalence of CHD in this study was 4% which goes with study done in Al Fallujah –Iraq^(5,6) .(2194) child were normal ,While 90 were having CHD .The study also showed a significantly higher prevalence of CHD among male with a male-to-female ratio of 1.06:1, while was the Male were male 1107 , Female 1176 .The distribution of participant according to CHD Was 93 (4%), Female constitute 1315 (58%), while Male constitute 42% (969). The most age group participated in the study was between 1-5yr.s was 930, (40.7%) (26 were CHD) followed by age group from 6-10yr.s was 415 (18.1 %) (29 wee CHD) as shown in figure 1.2.3 respectively. Types of CHD diagnosed by Echocardiography , the most common CHD was ASD 24 (27%), VSD 20 (23%), 9 (10%) Complete Av canal, TOF as shown in Table .The distribution of associated congenital anomalies and syndromes showed that most common associated congenital anomalies were deaf & mut 99 (4.3%) followed by Autism 76 (3%), Down syndrome 75 (3.2%) as shown in figure 5.The distribution of Diagnosed CHD in the participant according to Age Group as shown in Table .The CHD were more commonly found in age group 15-20yr.s 13 cases (8%), then 6-10yr.s CHD cases were 29 (6.9%) 1-11mn.s age group 8 cases (6%).The prevalence of CHD in this study was 4% . The study also showed relatively higher prevalence of CHD among male with a male-to-female ratio of 1.06:1. While in Egyptian study male to female ratio of 1.2:1 almost same⁽⁷⁾ .The CHD were more commonly found in age group 15-20yr.s (8%), While in Egyptian study , The majority was diagnosed within the first year of life (86.7%).Types of CHD diagnosed by Echocardiography , the most common CHD was non cyanotic ASD 27% (24), VSD 24 (20) , 9 (10%) Complete Av canal, while less commonly cyanotic heart disease TOF .While in the

Jordanian study the most common lesion were a cyanotic cardiac lesions Ventricular septal defect followed by atrial sepal defect, patent ducts arteriosus, and pulmonary valve stenosis .TOF was most common cyanotic heart disease⁽⁸⁾ .The participant with syndromes 40% were deaf & mut , 30% were Autism , 27% were down syndrome .the prevalence of CHD in deaf & mut children 4.3% followed by Autism (3%), Down syndrome (3.2%) as shown in figure 5. While in other study (45%) of down syndrome cases had an associated CHD⁽⁹⁾ .Probably because most of cases of down syndrome in our study were more than 10yr.s old. Echocardiography images of some congenital heart diseases shown in Figure(6).

Conclusion:

This study concluded that a significantly higher prevalence of CHD among male with a male-to-female ratio of 1.06:1

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