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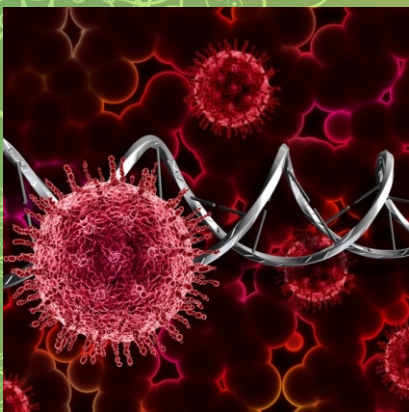
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Pregnancy Characteristics of Conjoined Twins Born at Dr. Soetomo Hospital Surabaya Period 2010-2019

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ABSTRACT

Background: Conjoined twins are a rare complication of pregnancy. The prevalence of occurrence is 1 in 200,000 pregnancies. As many as 40% of babies in cases of conjoined pregnancies die at birth and 30% die in the first days of life.

Objective : To present the characteristics of a conjoined pregnancy born in Dr. Soetomo Hospital, Surabaya, 2010-2019 period which is a referral hospital in Eastern Indonesia.

Methods : This study is a retrospective descriptive study on the case of conjoined twins born in Dr. Soetomo Hospital, Surabaya, in the 2010-2019 period. The data is taken from the electronic medical record of Dr. Soetomo Hospital.

Results : In this study, there were 16 cases of conjoined twins who were born in Dr. Soetomo Hospital. Most cases were conjoined twins of Thoracoabdominopagus (12 patients), Parapagus (2 patients), Cephalopagus (1 patient), and Omphalopagus (1 patient). Methods of delivery of conjoined twins were performed with caesarean section (9 cases), and vaginal delivery (7 cases). There were 9 cases of babies who died immediately at birth, and 7 cases of babies who were still alive until a few hours and a few days after birth. The age at diagnosis of conjoined twins was found at gestational age <20 weeks (6 cases), and when gestational age > 20 weeks (10 cases).

Conclusion : This case of conjoined twins is a rare case and requires multidisciplinary discussion. Early diagnosis is necessary to terminate the pregnancy as early as possible, in order to reduce the Caesarean Section delivery rate. In Dr. Soetomo Hospital for the period 2010-2019, the most cases of conjoined twins were Thoracoabdominopagus.

Introduction

Conjoined twins are identical twins with the body fused in the womb. This condition is a rare complication and occurs in monochorion monoamniotic pregnancies. The incidence of conjoined twins is 1 in 50,000 to 200,000 pregnancies.

To diagnose conjoined twins as early as possible, good antenatal care with ultrasound examination is needed to prevent conjoined twins diagnosed at term gestation, leading to high Cesarean Section Delivery rates. From other studies that have existed previously, it was found that the

prevalence of conjoined twins who died at birth was 40%. In comparison, 30% died in the first days after birth, and the remaining 30% survived longer (Kanaga *et al*, 2012). There are currently eight types of conjoined twins based on the classification, namely Cephalopagus, Thoracoabdominopagus, Omphalopagus, Ischiopagus, Parapagus Craniopagus, Pyopagus, and Rachipagus (Spitz *et al*, 2018).

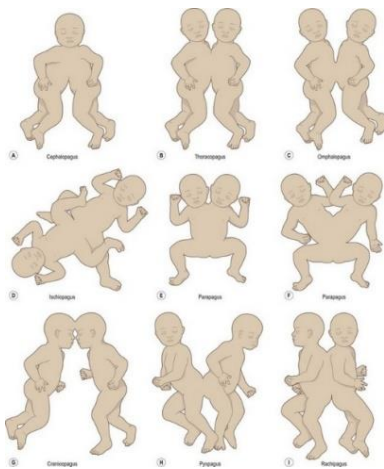


Figure 1. 8 classifications of conjoined twins

Methods

This research is a retrospective descriptive study using the electronic medical record of Dr. Soetomo Hospital. The inclusion criteria for this study were pregnant women with conjoined twins who gave birth at Dr. Soetomo Hospital. The data taken included maternal age, parity, gestational age, types of conjoined twins, maternal outcomes, infant outcomes at birth and length of survival after birth. The data was followed since the patient came to Dr. Soetomo Hospital until her pregnancy was

terminated, accompanied by the baby’s condition after birth.

Result and Discussion

During the period 2010 - 2019, there were 16 cases of conjoined pregnancy at Dr. Soetomo Hospital. From this study, it was found that the majority of mothers came from Surabaya (3 patients), with maternal ages range from 26-30 years (7 patients) (Table 1). The majority of gestational age at first diagnosed with conjoined twins was \geq 20 weeks (10 patients) (Table 1). And from the parity data, it was found the same number between primigravida (8 patients) and multigravida (8 patients) (Table 1).

Table 1. Characteristics of Conjoined Twins Pregnancy Cases in Dr. Soetomo Hospital

Characteristics of Conjoined Twins	Number
Referral From	
-Gresik	1
-Mojokerto	1
-Banyuwangi	1
-Sorong	1
-Nganjuk	1
-Malang	1
-Solo	2
-Sidoarjo	2
-Madiun	2
-Surabaya	3
Mothers Age	
-15-20	0
-21-25	5
-26-30	7
-31-34	1
\geq 35	3
Parity	

-Primigravida	8
-Multigravida	8
Gestational Age at First Diagnosed Conjoined Twins	
-≤20 weeks	6
-21-28 weeks	3
-29-32 weeks	6
-33-34 weeks	0
-35-37 weeks	1

The time of division after zygote fertilization determines the occurrence of multiple pregnancies. If the monoamniotic and monochorionic placentas divide during or after the 13th day after embryo fertilization, conjoined twins will occur. However, based on study by Lundin et al, the factors that play a role in determining the timing of embryo division are still unknown (Marcoz *et al*, 2011). Based on the classification, there are currently 8 types of conjoined twins, namely Cephalopagus, Thoracoabdominopagus, Omphalopagus, Ischiopagus, Parapagus, Craniopagus, Pyopagus, and Rachipagus (Knopman *et al*, 2014). In this study, the most cases of conjoined twins were type of Thoracoabdominopagus as many as 12 patients, with details of 7 cases of fused heart and liver, and 5 cases of fused heart.

In a study in Brazil that discussed the experience of handling conjoined twins for 20 years from 1992 to 2012, it was found that the number of conjoined twins was 21 cases. From 21 cases of conjoined twins, as many as 10 conjoined twins could not

undergo separation surgery because of the complexity of the fused organs, consisting of 1 case of ischiopagus conjoined twins, and 9 thoracoabdominopagus. The remaining 11 cases of conjoined twins successfully underwent separation surgery consisting of 7 ischiopagus, 3 omphalopagus, and 1 craniopagus (Tannuri *et al*, 2013).

Table 2. Distribution of Conjoined Twins at Dr. Soetomo Hospital

Type of Conjoined Twins	Number
-Thoracoabdominopagus	12
-Parapagus	2
-Cephalopagus	1
-Omphalopagus	1
Thoracoabdominopagus	
-Heart and Liver Fused	7
-Heart Fused	5

There is no literature that determines the exact time of delivery in conjoined pregnancies. However, several case reports recommend termination at 35 weeks of gestation after corticosteroid administration to avoid the risk of IUFD and prematurity (O’Brien *et al*, 2015). From several case reports, performed termination with Caesarean Section Delivery to avoid umbilical cord twisting (Van Mieghem *et al*, 2014; Lee, 2012). Vaginal deliveries in previously undiagnosed conjoined twins are at high risk for shoulder dystocia (Kucukbas *et al*, 2020), uterine rupture and IUFD (Chen *et al*, 2011). Vaginal delivery in

conjoined twins can be performed in the 2nd trimester of gestation where the baby is smaller than at term, and is performed in conjoined pregnancies with babies who have a small chance of survival after birth (Ferid *et al*, 2021). In 16 cases of conjoined pregnancy in Dr. Soetomo Hospital, the most method of delivery was by Caesarean Section Delivery (9 cases). As many as 7 cases can be diagnosed by fetomaternal ultrasound at ≤ 20 weeks of gestation, so that they can be delivered vaginally.

Before deciding on termination, the Fetomaternal team at Dr. Soetomo Hospital conducted multidisciplinary meetings with other departments. From 16 cases of conjoined pregnancy in Dr. Soetomo Hospital, 11 cases have gone through the case conference first.

Table 3. Distribution of Delivery Methods, Apgar Score, and Length of Survival of Babies in Conjoined Twins Cases at Dr. Soetomo Hospital

Mode Of Delivery	Number
-Spt Abortion	4
-Spt Vertex Vaginal	3
Delivery	
-Caesarean Section	9
Apgar Score	
-0	9
-1-3	3
-4-6	2
->6	2
Babies Survival Time	
-IUFD	9
-1 hour	2
-24 hours	3
- ≥ 24 hours to 30 days	2

The results of the baby's output in the case of conjoined twins found 9 cases of babies who died immediately at birth, and found that 7 babies were still alive. But in the end, the conjoined twins died, the longest conjoined twins can survive is 30 days.

Conclusion

Conjoined twins pregnancy is a rare occurrence. There are 16 cases of conjoined pregnancy in Dr. Soetomo Hospital during the 2010-2019 period. If the conjoined pregnancy can be diagnosed as early as possible, it will be possible to terminate it immediately and reduce the Caesarean Section delivery rate. Until now, there has not been a case of conjoined twins that can survive long after birth. In the case of conjoined twins pregnancy, multidisciplinary management is required that involves the Obgyn Team, Pediatric Surgery Team, Pediatrics Team and Anesthesia Team.

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Perils of Tight Clothing: A Survey Report

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ABSTRACT

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Background: Physical activity is defined as body movement produced by striated muscle that substantially increase utilization of energy, has numerous advantageous effect on the health. The level of physical activity influenced by different factors, include modifiable and non-modifiable factors. Non-modifiable factors include age, family history, sex and ethnicity. The modifiable factors include sedentary life style, lack of time, injury, body mass composition, socioeconomic level, leisure time and posture.

Objective: To evaluate the effects of tight clothing on posture and physical activity, types of most frequent tight dress used by the participants, their effect on ADLs, problems caused by it & regions most commonly affected and plan for future.

Methods: In this Cross-sectional study the convenient sampling technique was used. Females with the ages between 15 years to 55 years was included and those having physical disability and those diagnosed with medical problems were excluded. The Questionnaire was used to collect data after Consent was obtained from 186 participants. The SPSS was used for the statistical analysis.

Result: The 80.6% (n=150) had low level of PA and 97.8% (n=182) had bad posture. Frequent used of tight clothing include underwear (99.5%, n=185) shirt (73.1%, n=136), jeans (43.5%, n=81), belt (90.3%, n=168), shoes (76.9%, n=143), sports gloves (95.7% n=178), bracelet (95.7%, n=178) and bra 98.4% (n=183)

The most effected region was leg (n=102, 54.8%), low back (22.0%, n=41), foot (N=42, 22.6%), thigh (n=64, 34.4%), back (13.4%, n=25)

Pain (65.6%, n=122), itching (46.2%, n=86), heaviness (41.9%, n=78), and numbness (18.8%, n=35) were the main problems observed due to tight clothing.

The tight dress disturbs their ADLs (78.5%, n=146) the plan for change tight dressing (n=110, 59%) also planning to used safety measure (n=137, 73%)

Conclusion: The tight dressing affects the physical activity and posture, leads to several problems in different regions, results in trouble while performing different physical activities. There is need to educate people about the use of proper and comfortable dress in daily routine and alert people about perils of tight dressing regarding posture and physical activity through social media, seminars and lectures.

Introduction

Physical activity is defined as body movement produced by striated muscle that substantially increase utilization of energy, has numerous advantageous effect on the health (WHO, 2020). In Pakistan the prevalence of inactivity is 60.1% among 534 adults (Khuwaja and Kadir, 2010). The level of physical activity influenced by different factors, include modifiable and non-modifiable factors. Non-modifiable factors include age, family history, sex and ethnicity. The modifiable factors include sedentary life style, lack of time, injury. body mass composition, socioeconomic level, leisure time and posture (Bauman, *et al.*, 2012).

Posture is acquired as a consequence of many muscle worked in a coordination used to maintain stability. The postural concepts are based on the series of chains which rely on the mechanic of the body in which complications can develop anywhere along the body. The disturbance in the chain can lead to abnormality below or above that junction. This generates more strain on the supportive structures. Additionally, persisting postural faults can produce aches, distress or disability (Gurney, et al., 2017).

The new technology and advancement in the field of fashion are introduced in this modern era, the fashion industry develops different types of product for the consumers. now days the tight fitted

dressing is popular worldwide and preferred by the consumers to express the personality, self-esteem, attractiveness, maintaining their status in order to retaining the social impact in the society. However according to the findings by the experts, the tight dressing has many adverse effects on the body and causes various problems in different region of the body (Kim and Yoo, 2016).

Now days the trending and fashion of tight jean become famous. A previous study showed that thigh jean may lead to injury which reduce circulation result in decrease in temperature of skin in the pelvic region so, it has great impact to the person body (Yoo and Yoo, 2012). Yoo and Park investigate that tight waist belt lead to decrease and limit the forward movement of the center of gravity leads to increase pelvic angle as are result of compensation (Park and Yoo, 2014).

A study showed that wearing of tight necktie lead decrease cervical range of motion, in consequence of limited mobility and physical variation in the tissue and muscle of shoulder and neck. Another study showed that tight outfits decrease the movements around shoulder region and lead to major effect on the specific muscular arrangement in the thoracic and cervical region of spine (Yoo, *et al.*, 2011).

The study showed the fashion of tight high heeled shoes is become very popular,

the energy expenditure and biomechanics of lower extremity vary in with high heel shoes (Schoffl and Kupper, 2013). The effects of type, height of shoe heels on the body have revealed that the lower extremity mechanics and the energy cost differ with heel height and old shoes also had greater impact on biomechanics of foot (Lopez-Lopez *et al.*, 2016; Foster *et al.*, 2012)

According to author's information there is no study directed on the effect of tight clothing on level of physical activity that may demonstrate that whether the physical activity and physical activity improving therapies/techniques are affected by tight clothing or not. Hence it is necessary to evaluate tight clothing effect on level of physical activity and outcome of physical therapy interventions. The study aim is to investigate the effects of tight clothing on posture and physical activity. The study has several objectives given below

- Tight clothing leads to difficulty in different activities (like walking, sitting, lying, jogging, working and ADLs).
- Tight dress (like jeans, shirts, shoes, belt, sports gloves, bracelet, bra and underwear) affects physical activity and posture.
- Tight dress leads to different problems (like numbness, tenderness, pain, itching, heaviness,

increased heart rate and increased respiratory rate).

- Regions affected (like leg, foot, thigh, hip, hand, low back, abdomen, neck, arm, chest and back) by Tight dress.
- Planning for future regarding tight clothing

Methods

In this Cross-sectional study the convenient sampling technique was used. Females (married and unmarried) with the ages between 15 years to 55 years were educated about wearing tight clothes while patients having physical disability and those diagnosed with medical problems like obesity, HTN, heart diseases and any infection were excluded.

Questionnaire derived from literature including open and close type questions, was used to obtain the data and was administered in English. Questionnaire was hand over to the participants of different areas and was filled out after agreement of consent form the participants. Trans theoretical model was used for future planning. This tool was validated through focused group discussion of 5 experts in pilot study. SPSS was used for the statistical analysis and excel for graphs. An ethical approval was obtained from departmental ethical review committee of the AJ&K

University. Participant fill the consent and participate in the study who refused not

forced to fill the questionnaire all the participant knows about the study objective.

Result and Discussion

The result in table showed that Female gender with age range from 15 to 55 year participate in this study majority of them was 25-35-year-old (161), and most of them was undergraduate (140), majority work 6-10 hrs. (106) and they take rest 2

hrs. daily (119). Majority said they feel discomfort while wearing tight clothing (100). And the tight dress disturbs their ADLs (116) the plan for change tight dressing (110) also planning to used safety measure (137)

Table 1. Demographical Detail

Demographical variable		
AGE	15-25 yrs.	24
	25-35 yrs.	161
	35-55 yrs.	1
EDUCATION	Undergraduate	140
	Graduate	34
	Postgraduate	12
WORKING HOURS	<6 hrs.	73
	6-10 hrs.	106
	>10 hrs.	7
REST HOUR AFTER WORK	<1 hrs.	3
	1 hrs.	59
	2 hrs.	119
	3 hrs.	5
WEARING TIGHT DRESS FEEL COMFORTABLE DURING WORK	no	100
	some what	24
	yes	62
TIGHT DRESS DISTURBS ACTIVITY OF DAILY LIVING	yes	116
	some what	30
	no	40
PLANNING FOR CHANGE TIGHT DRESSING	yes	110
	no	76
PLANNING FOR SAFETY MEASURE	yes	137
	no	49

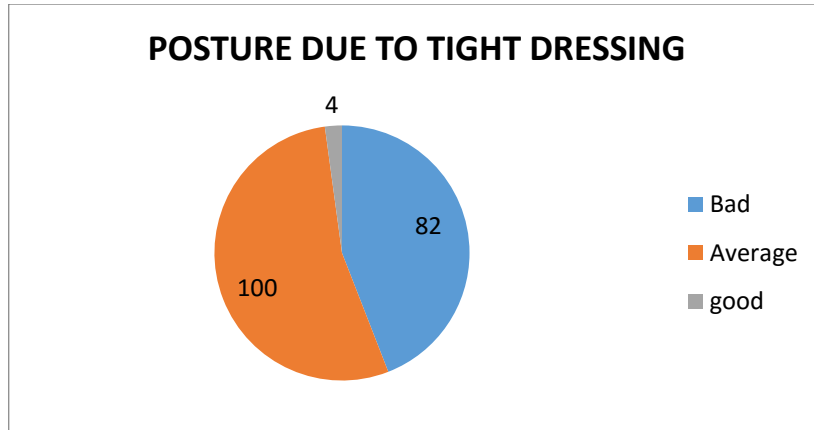


Figure 1. Level of posture

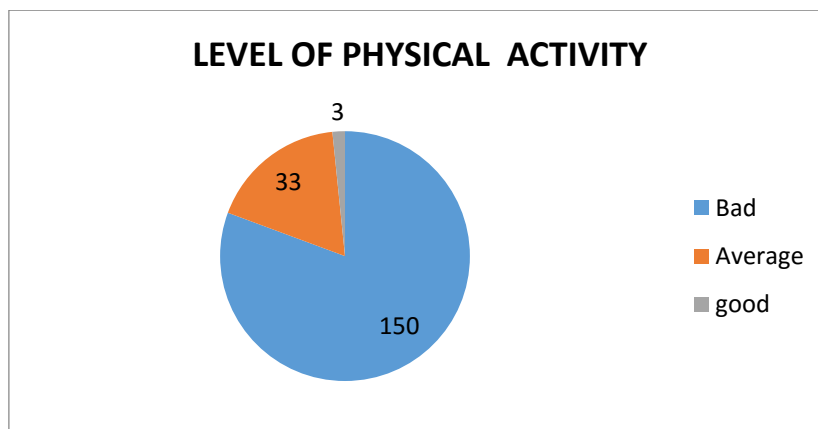


Figure 2. Level of physical activity

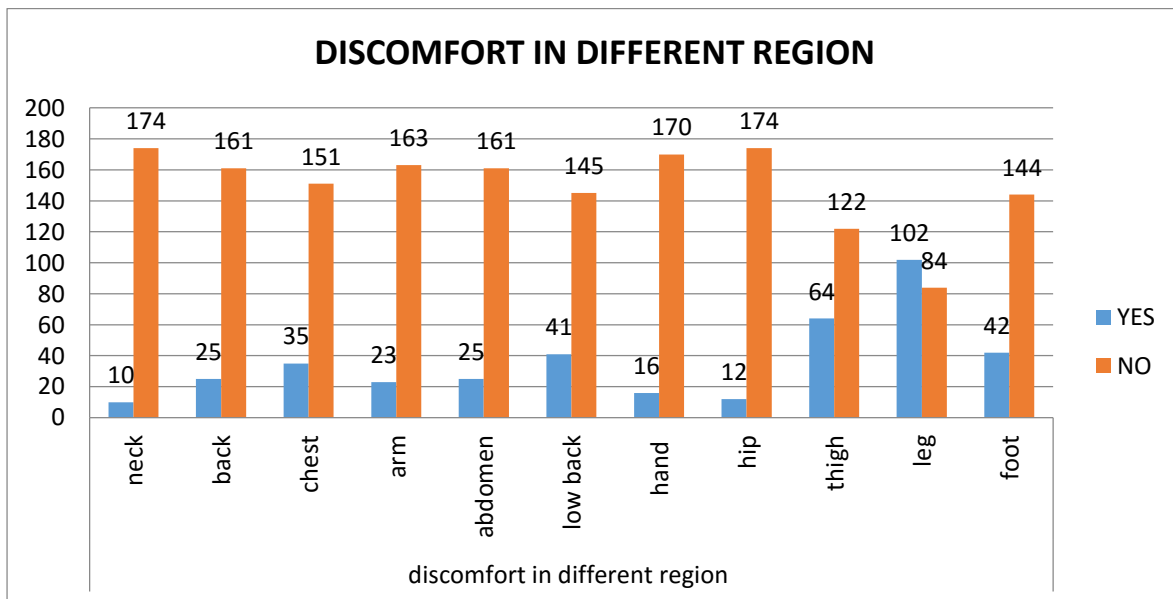


Figure 3. Discomfort in different region

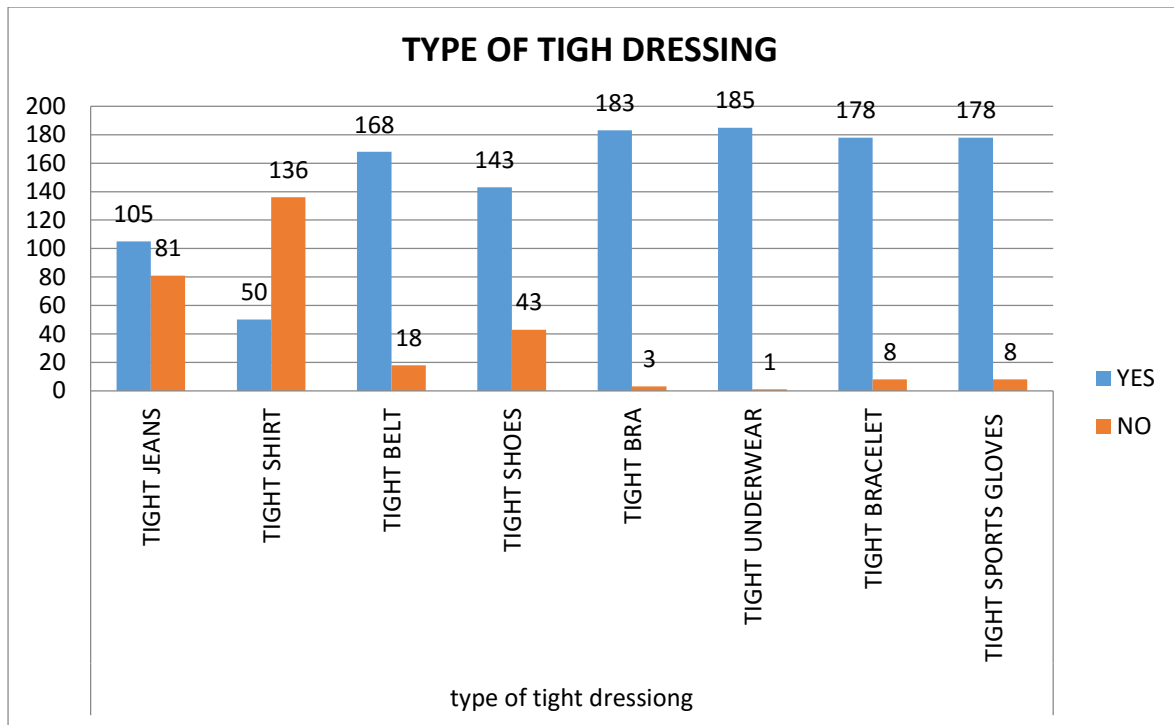


Figure 4. Type of tight dressing

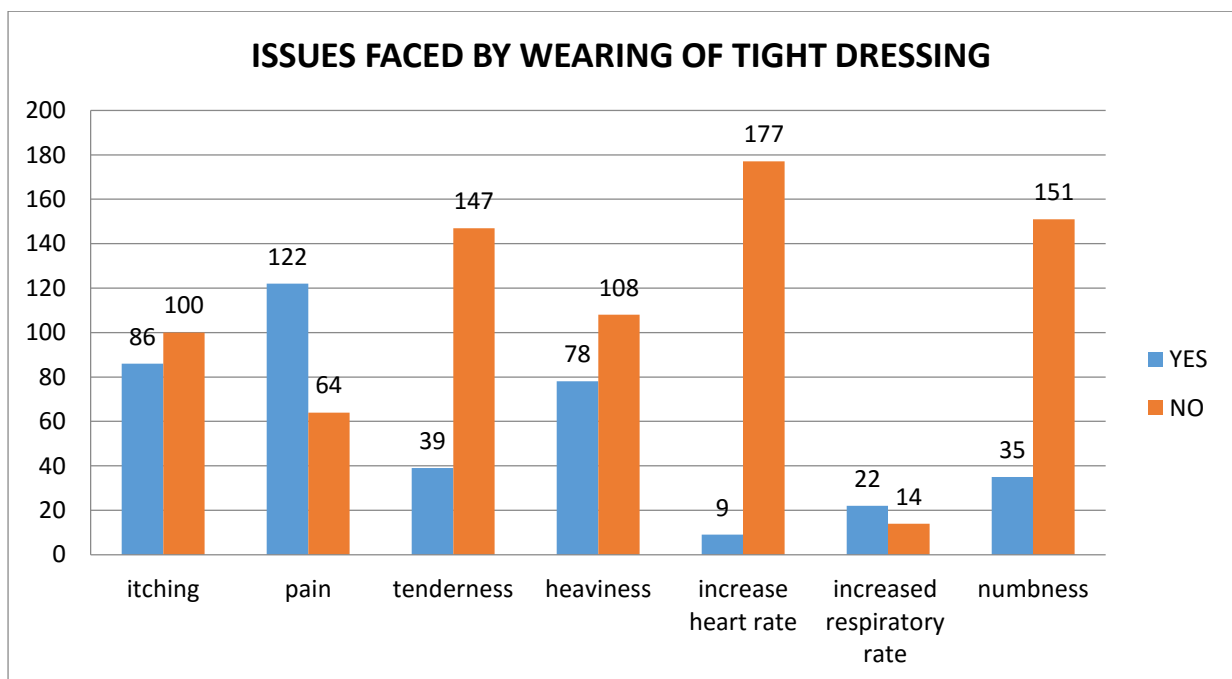


Figure 5. Issue faced by wearing tight of clothing

The result in figure 1 to 5 showed that 80.6% (n=150) had low level of physical activity and 97.8% (n=182) had bad posture. The most effected region was leg

(n=102, 54.8%), low back (22.0%, n=41), foot (N=42, 22.6%), thigh (n=64, 34.4%), back (13.4%, n=25) due to Frequent used of tight clothing include underwear (99.5%,

n=185) shirt (73.1%, n=136), jeans (43.5%, n=81), belt (90.3%, n=168), shoes (76.9%, n=143), sports gloves (95.7% n=178), bracelet (95.7%, n=178) and bra 98.4% (n=183). The Pain (65.6%, n=122), itching (46.2%, n=86), heaviness (41.9%, n=78), and numbness (18.8%, n=35) were the main problems observed due to tight clothing.

Wearing tight clothing cause postural in balance and decrease the physical activity the result revealed that the 80.6% (n=150) Participant had bad level of physical activity and 97.8% (n=182) Had bad posture most previous studies tell that the physical activity is impossible with tight dressing it also impacts on posture (Gurney, et al., 2017)

Result showed that Due to tight dressing the 186 participants 5.4% (n=10) had neck pain due to tight shirts. one study reported that necktie affects the neck in different ways; it may lead decrease cervical range of motion, in consequence of limited mobility and physical variation in the tissue and muscle of shoulder and neck in those who wear it compared to without it (Yoo, et al., 2011).

In current study 18.8% (n=35) had chest discomfort in 73.1% (n=136) participants those who wear tight shirts. This study has finding similar to following studies related to physical activity, tight shirt leads to decrease physical activity in majority of participant. The result of one

study directed by Merrie MacHoseErik indicated that tight clothing significantly interfere with diaphragmatic breathing. Clothing can directly affect the physiology (Na, 2015). Another study showed that if wearing tight-jacket conditions compared with the general-jacket conditions the muscle of serratus anterior and lower trapezius and muscle activity limited and lead to decrease normal scapular movements lead to pain and discomfort in tight jacket condition (Kim and Yoo, 2016).

The current study result showed that out of 99.5% (n=185) participant who wear tight underwear, 13.4% (n=25) had sensation of uneasiness in abdomen, 6.5% (n=12) had uneasiness in hip. A study analyzed the underwear presenting feature of discomfort with negative effect on women health suggest that produce underwear in a fashion that preserved health and well-being (Alves, et al., 2013).

Result showed that the tight belt (n=168) caused discomfort in abdomen in 13.4% (n=25). The discomfort in abdomen leads to decrease in physical activity. A relation between tight belt and physical activity showed that 150 participants had a bad level of physical activity among them 134 wear tight belt, previous study showed that During tight belt condition in sitting position the anterior pelvic tilt angle markedly increased in compression of no belt condition (Park and Yoo, 2014).

The result shows that those who wear tight jeans (43.5%, n=81) had sensation of discomfort in abdomen (13.4%, n=25), hip (6.5%, n=12), thigh (34.4%, n=64) and leg (54.8%, n=102). In relation of physical activity and tight jeans 150 person had bad level of physical activity among them 61 people wear tight jeans that reduce the physical activity. The result of current study had some findings similar with following studies; The first study reported that the tight jean leads to injury due to decrease circulation decrease skin temperature in pelvic area and patients not involve in horse riding, skiing or outdoor activity according to Weismann and Larsen (Chen, 2018). The second study showed that restrictive trouser lead to discomfort and limit the muscle activity of trunk and spine movement (Eungpinichpong, et al., 2013). The third study showed tight compression shorts is used to wear lead to decrease circulation deep and superficial region of thigh during recovering from the high physical activity (Sperlich, et al., 2013). The fourth study reported that due to tight jeans the angle of lumber flexion markedly increased and angle of hip flexion decreased when compared with wearing of general jean, it result in low back musculoskeletal problems (Park and Yoo, 2014).

The results report that 76.9% (n=143) participants wear tight shoes among them 22.6% (n=42) presented foot discomfort. In

relation to the physical activity 150 person had bad level of physical activity among them 120 wear tight shoes and 33 had an average level of physical activity among them 21 persons also wear tight shoes. Several studies had parallel result to the current study result in different contest. A study indicated inappropriate footwear change the biomechanics of foot the and planter pressure lead to musculoskeletal disorder of foot (Ikpeze, et al., 2015). The previous study expressed that the chronic use of tight climbing shoes lead to overstrain injuries (Schoffl and Kupper, 2013). A study showed that Inadequate shoe size has a markedly negative effect on quality of life related to foot health (Lopez-Lopez, et al., 2016).

Regarding tight bra, 98.4% (n=183) wear it amongst 18.8% (n=35) had chest discomfort. Maximum participants (37.6%, n=70) had mild annoying pain. Previous studies showed that The ill-fitting bra contribute to pain, discomfort, pressure, impaired posture and musculoskeletal problem of upper limb, neck and back due to inadequate breast support (Spencer, et al., 2020).

No such study is conducted in this region about tight dressing. Sample size was 186. It provides platform for further studies. Limitation and recommendation: This study is conducted in one district of AJK and it is recommended that for

generalized result it should be carried out on large sample in different district of AJK.

The RCT carried out about the tight dressing and posture analysis on segment wise

Conclusion

Tight dressing affects the physical activity and posture and leads to several problems in different regions. Due to tight dressing ADLs was restricted. There is need to educate people regarding use of proper and comfortable dress in routine and alert people about perils of tight dressing regarding posture and physical activity through social media, seminars and lectures.

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Prevalence of Migraine Among Headache Patient In Muzaffarabad

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ABSTRACT

Background: Migraine is a most common, progressive and sometimes incapacitating disorder. Symptoms of migraine may include nausea, vomiting, photophobia (sensitivity to light), phonophobia (sensitivity to sound) and usually a short period of visual disruption occur.

Objective: To find the prevalence of migraine among headache patient in Muzaffarabad.

Methods: Cross-sectional study design, 700 patients with headache were recruited in the study and measured by questionnaire “International classification of headache disorder diagnostic criteria for migraine”.

Results: The Prevalence of migraine among headache patient was 40%.

Conclusion: It is concluded from the results of this study, that out of 700 study participants 40% (281) participants are suffering from migraine and they were unaware of this.

Introduction

Migraine is a disorder of headache. Headache disorders are of two types primary and secondary headache disorder, migraine is a primary headache disorder that has progression from moderate to severe and characterized by frequent headaches. It can be described as a chronic disorder with periodic attacks, which progress towards more persistent and severe pattern (Ahmed, 2012). Migraine is

a most common, progressive and sometimes incapacitating disorder (Starling and Dodick, 2015). The lives of migraineurs are commonly affected by the condition, many aspects like academic, occupational, leisure, social, family life and other activities (AlHarbi and AlAteeq, 2020; Palacios-Cena *et al.*, 2017). Migraine can be preceded by sensory cautionary signs and the pain which is caused by migraine is severe and remains

for hours or even days. These sensory warning sign which is called aura can occur before migraine attack followed by a severe headache that commonly arise from one side of the head. Its main effect on people from age 15 to 55 years. Normally, the headache affect unilateral, are pulsating in nature the headaches affect unilateral, have pulsating quality and last from 2 to 72 hours (Dhiman and Bharwaj, 2019). Other symptoms of migraine may include nausea, vomiting, photophobia (sensitivity to light), phonophobia (sensitivity to sound) and usually a short period of visual disruption occur. In U.S. almost 28 million people have migraine. Migraine headaches affects both adults and children. Boys and girls are affected equally by migraine before puberty but women are more than men have migraine headaches after puberty (Stovner *et al.*, 2016). The prevalence of migraine in various countries is an average

of 12 %. Pain anywhere in the area of head and neck is the symptom of headache. This is a symptom of migraine (sharp and throbbing pain), tension type headache and cluster headache (Lee *et al.*, 2018). According to D. et. al in 2016 the estimated worldwide prevalence of migraine was 14.4%, for men 9.8% and for women 18.9%. Prevalence of migraine in East Asia consistent with worldwide estimate in non-aged adults was ranged from 6% to 14.3% (Verma and Meena, 2019).

Methods

This study was a cross-sectional study design. This study was conducted in Muzaffarabad on 700 people with headache. Inclusion criteria was males and females with recent attacks of headache with age group from 15 to 95 years. While exclusion criteria was participant with eyesight week, trauma and neurosurgery.

Result

Table 1. Prevalence of Migraine Among Headache Patient

Total Participants	Migraine	Percentage
700	281	40%
Variable, Frequency and Percentage		
Variable	Frequency	Percentage
Age		
15 - 35	520	74.3
36 - 55	151	21.6

56 - 75	25	3.6
76 - 95	4	.6
Gender		
Male	290	41.4
Female	410	58.6
International Classification Of Headache Disorder Diagnostig Criteria Fr Migraine Variables	Frequency	Precentage
At least five attacks fullfiling criteria		
Yes	699	99.1
No	1	.1
Headache attacking lasting 4 – 72 hours		
Yes	542	77.4
No	158	22.6
Headache has unilateral location		
Yes	214	30.6
No	486	69.4
Headache has pulsating quality		
Yes	313	44.7
No	387	55.3
Headache has moderate or severe pain intensity		
Yes	562	80.3
No	138	19.7
Headache has aggra-vation by or causing by routine physical activity		
Yes	148	21.1
No	552	79.9
During headache nausea or vomiting		
Yes	216	30.9
No	484	69.1
During headache photophobia and phonopobia		
Yes	447	63.9
No	2553	36.1

Discussion

Headache is a public problem among all age groups and persistent headaches create a significant burden on the person and society. It affects the student's social and academic life. According to Menon et al in India in 2013 a population based study showed that adult population had active headaches 46% with 11% being migraine (Menon and Kinnera, 2013). My study showed that out of 700 people with headache 40% people have migraine. According to study of Pryse phillips et al in 2009 prevalence of migraine was 10.6% estimated by international headache society criteria, prevalence of tension headache was 0.9%, 0.7% for migraine like headache and for non-specific headache 1.3% (Verma and Meena, 2019). According to Johnson et al in 2018 in United State, this study showed that almost 12% of the population had migraine, estimated 39 million individuals (Christiansen *et al.*, 2015). According to Karsarava et al in 2007 in Germany prevalence of migrain assumed 16,6% in population based study detected by interviews and headache questionnaires (Mengistu and Alemayehu, 2013). According to Katsavara in 2009 in Georgia in door to door survey between 1145 individuals, 0.09% prevalence rate (Jameson, 2018). Above mentioned studies do not match with my study, in my study

the prevalence rate is 40% and above mentioned previous studies conducted in other countries have less prevalence than my study.

According to D.et al. in worldwide in 2016, the prevalence of migraine was 14.4%; 9.8% for men 18.9% for women. In East Asia Population based study's results showed that the prevalence of migraine in non-aged adults ranged from 6.0% to 14.3%. Prevalence of migraine (Verma and Kinnera, 2013). According to Wober et al in East Asia the highest prevalence of migraine between adult women 30 to 49 years old (Wober-Bingol, 2013). According to Menon B et. Al. in india in 20013 42% of the students complaining of headache and confirmed to the diagnosis of migraine (Menon and Kinnera, 2013).

Conclusion

It is determined from the results of this study that, out of 700 participants presenting with headache 281 (40%) were actually suffering from migraine and they were unaware of this.

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Case Report: Paranoid Schizophrenia with Stressing Point Screening for Paranoid Schizophrenia Prognosis

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ABSTRACT

Background: Schizophrenia is a psychiatric disorder characterized by decrease or inability to communicate, reality disorders, namely hallucinations and delusions, cognitive impairment and difficulty to carry out daily activities. Paranoid schizophrenia is one of the most common types of schizophrenia and its has good prognosis among other types of schizophrenia. But the prognosis decision making for paranoid schizophrenia is influenced by the following factors: prepsychotic personality, acute or chronic, type of schizophrenia, age, administration of medication, presence or absence of precipitating factors, and heredity.

Objective: This study aims to determine the prognosis of paranoid schizophrenia in case is using the factors above. The case study is based on the examination of patients in the outpatient psychiatric clinic of the Islamic Hospital of Jemursari Surabaya who have received the patient's consent.

Methods: The method of diagnosis uses a pocket book for the diagnosis of mental disorders PPDGJ-III and DSM-V.

Result: The results are showed that is paranoid schizophrenic patients with a poor prognosis (*dubia ad malam*).

Conclusion: All of paranoid schizophrenia have not being a good prognosis (*dubia ad bonam*) because it is influenced by several factors, namely prepsychotic personality, acute or chronic, type of schizophrenia, age, administration of medication, presence or absence of trigger factors, and heredity.

Introduction

Schizophrenia comes from the Greece, the *schizein* means separate and phren the means *soul*. Schizophrenia can be defined as the separation or incompatibility between affect, cognition, and behavior (Hendarsyah, 2016). Schizophrenia is a syndrome with a wide

variety of cause and course of diseases, and a number of consequences that depend on the balance of genetic, physical and cultural influences. Schizophrenia is a psychiatric disorder characterized by decrease or inability to communicate, reality disorder, hallucinations and delusions, cognitive impairment and

difficulty in carrying out daily activities (Sari et al., 2019). Paranoid schizophrenia is one of the most common types, Its main characteristics are suspicion and auditory hallucinations, but the cognitive function and affect are well (Zahnia and Sumekar, 2016). The schizophrenia prevalence of according to WHO (2016), there are around 21 million people with schizophrenia in the world, whereas according to Riskesdas 2013 "the prevalence of schizophrenia reaches around 400,000 people or 1.7 of the 1,000 population in Indonesia" (Maylani et al., 2018). Most schizophrenia types are paranoid schizophrenia at 40.8%, and the over is other types of schizophrenia (Sari et al., 2019). In general, the prognosis of paranoid schizophrenia is better (*dubia ad bonam*) compared to other types of schizophrenia, because it has a good response to treatment. (Sari et al., 2019), however, the basis for the decision making for the prognosis of paranoid schizophrenia influenced by the following factors: prepsychotic personality, acute or chronic, type of schizophrenia, age, administration of medication, presence or absence of precipitating factors, and heredity. (Maramis, 2009). Therefore, the stressing point of this paper is focused on determining the prognosis of paranoid schizophrenia in cases using these factors.

Methods

This study was based on the examination of outpatient psychiatric clinic at the Jemursari Islamic Hospital in Surabaya, and then to trace patient has getting greamen by the patient.

The method of diagnosis uses a pocket book for the diagnosis of mental disorders from PPDGJ-III and DSM-V by Dr. dr. Rusdi Muslim Sp.KJ, M.Kes. The discussion of this paper uses PPDGJ-III/DSM-V, as well as text books and journals that have attached by the literature review.

Case

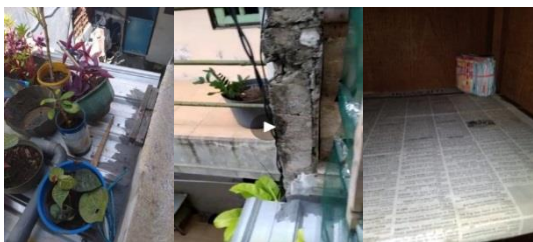
Mr. S is 72 years old, address Gebang kidul 41A Surabaya, religion of Islam, last degree in law education, married, retired civil servants. He Comes to the Jemursari Islamic Hospital Mental clinic with the main complaint of "Suspicious Thoughts".

Suspicious thoughts have been began on August 10, 2014 and aggravated on April 1, 2021, suspicious thoughts is about his wife's affair with several men while the patient was out of town, the man is Mr., R, the man who gave the necklace (unknown name) and Mr. B.

Mr. B is a neighbor who lives next to the patient's house, when the patient comes from malang city, the patient sees his wife naked and only covered with a

blanket, there is no sound of intercourse when the patient enters the house or men's clothes around the bed, the next day the patient gets a flower pot collapsed in the attic (picture 1), its made the patient suspect that there was a man passing by the attic, namely Mr. B, after the patient checked his wife's wardrobe and got 11 million (picture 1), the patient suspected that this money was used to capitalize on his affair (Mr.B) to sell coconut ice, but Mr.B admitted that he got the capital from his teacher's girlfriend.

The patient send message to Mr. B "Tomorrow I will go to Banyuwangi, the house is empty, you can sleep at home". Mr. B explanations on the text, the patient took out a knife and said he only told him not to accuse, the patient had been scolded by the police, but when asked why? The patient replied that he did not know, and said he was beaten by Mr. A, Mr. A is Mr. B's brother-in-law.



Picture 1: A collapsed flower, 11 million bills and the boundary of the patient's house and Mr.B

The patient's wife is the child of the cleric, she is good to read and memorize

the al - quran, the patient's wife rare to leave the house and the patient does not know when his wife meets with Mr. B, the patient is only suspects that his wife having sex with Mr.B with naked evidence in his room and pot fallen flower. When he remembered his wife's affair, the patient wanted to strangle, beat and slap his wife, especially when he has be daydreaming or having a blank mind. The patient admits that he is often goes out of town, but at this time the patient does not want to go out of town, the patient is not happy at home and want to leave the house. There is no family history of schizophrenia, Premorbid personality: irritable and no history of substance use.

The Psychiatric Status: Male, elderly, medium steature, face according to age, using clothes and cloth pants, neat appearance, using a mask, watches and glasses, neat hair. It's cooperative with the examiner and sitting quietly, Compos mental awareness, positive contact, verbal, fluent and relevant, good W/T/O orientation, compatible depressive mood / affect, Thinking process: non-realistic, adequate flow, suspicious content, There is no impaired perception, adequate will, aggressive psychomotor, Intelligence MMSE: 24 (suspicious cognitive impairment) and insight grade 5.

The Multiaxial diagnosis includes: Axis I: F20.0 Paranoid schizophreria,

Axis II: Paranoid personality traits, Axis III: none, Axis IV: Not found, Axis V: GAF Scale at examination: 60 (moderate symptoms, moderate disability), GAF The best scale for the last one year are 70 some mild and persistent symptoms, mild disability in function, generally good.

The treatment was given Haloperidol 2.5 mg 2 dd 1, monitoring primary effects, secondary effects (extrapyramidal symptoms) and medication adherence (Maslim, 2014). The prognosis in the case of paranoid schizophrenia above is *dubia ad malam*.

Discussion

The basis for the decision making of schizophrenia prognosis is influenced by several factors, namely: prepsychotic personality, acute or chronic, type of schizophrenia, age, administration of treatment, presence or absence of trigger factors, and heredity (Maramis, 2009).

a. Prepsychotic personality

The prognosis in schizophrenics who have be prepsychotic personalities, personality disorders, and persistent personality traits is poor (Widyarti et al., 2019).

b. Acute or Chronic

If schizophrenia occurs acutely, therefore the prognosis is better than when it arises slowly/chronically (Maramis, 2009). In short the duration

of untreated psychosis, is the better the to response therapy, where is the patient who has been a long duration of untreated psychosis in the early stages of schizophrenia, it will takes longer to achieve remission, lower recovery rates, greater likelihood of relapse and have a bad outcome (Cahyaningsih and Hutauruk, 2019; Widyarti et al., 2019).

c. Types of Schizophrenia

The prognosis of paranoid and catatonic schizophrenia is better than other types of schizophrenia, because it has good response to treatment (Sari et al., 2019), it's often happend by patients with catatonic and paranoid schizophrenia recover and return to prepsychotic personality, many of these sufferers can be returned to society, whereas hebephrenic schizophrenia and simplex schizophrenia have a poor prognosis, usually our patients with this type of schizophrenia are lead to mental deterioration (Maramis, 2009).

d. Age

Age is an important factor in the onset of schizophrenia. The schizophrenia is most commonly occurs in late adolescence or adulthood and rarely occurs before adolescence or after age 40. The age of 17-40 years are productive age filled with a large burden of responsibility and it is often a cause of stress so that they are at risk of

experiencing schizophrenia. The onset of schizophrenia in men is earlier than in women. The onset of schizophrenia in women 3-5 years is slower than men. Women has 2 peaks of onset, it's namely in the age range of 25-30 years and > 45 years, while men has a peak age in the age range of 21-25 years (Cahaya et al., 2020).

The prognosis onset for adult age is better than early age. This is because in the age of early onset schizophrenia symptoms usually appear slowly, it will be more chronic and show large deficits in almost all cognitive measures, so that most of the prognosis is poor and sometimes can be exacerbated by environmental factors (Widyarti et al., 2019).

e. Treatment

As fast as the treatment is given, it's get better prognosis (Maramis, 2009). Early intervention in the form of drugs and psychosocial conditions is very important because the longer it is not treated, the likelihood of relapses is more frequent and the resistance to therapeutic efforts is getting stronger (Syarif, et al., 2020).

f. Heredity factor

The prognosis becomes more severe if there is one or more people with schizophrenia in the family (Maramis, 2009).

g. Trigger Factor

The prognosis of schizophrenic patients will be better if the patient has be trigger factors such as physical illness or psychological stress. It is caused schizophrenia episodes, which are primarily identified as stress, It will be respond more quickly than schizophrenia without a causes (Widyarti et al., 2019).

Table 1. Prognostic evaluation items

Evaluation Items	Ad Bonam	Ad Malam
Premorbid personality	-	Personality trait: paranoid
Acute or chronic	-	Chronic
Kind of distraction	Paranoid Schizophrenia	-
Young or advanced age	-	72 years
Providing treatment	-	Late intervention
Trigger factors	-	Nothing
Heredity	Nothing	-

Based on the theory above, it can be concluded that the prognosis of this patient is Dubia Ad Malam (Table 1).

Conclusion

All of paranoid schizophrenia have not being a good prognosis (dubia ad bonam) because it is influenced by several factors, namely prepsychotic personality, acute or chronic, type of schizopenia, age, administration of medication, presence or absence of trigger factors, and heredity. The prognosis in this case is dubia ad

malam as it is acquired recurring personality traits:paranoid, chronic, good disease, old age, late treatment, no trigger factors, and heredity.

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The Relationship of Gentamicyn Antibiotic Exposure To: *Escherichia coli* Bacteria Resistant to Antibiotic Gentamicyn and *Escherichia coli* ESBL In Vitro

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ABSTRACT

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Background: The development of bacteria that have been resistant to antibiotics can complicate the treatment process. Either causes of antibiotic resistance is inappropriate use of antibiotics. *Gentamicyn* is an aminoglycoside-derived antibiotic which its role is very significant for Gram-negative bacteria. Repeated use of *Gentamicyn* antibiotics can cause changes the effectiveness of *Gentamicyn* so that non ESBL-*Gentamicyn* susceptible *Escherichia coli* will change into ESBL-*Gentamicyn* resistant *Escherichia coli*.

Objective: This study aims to prove that repeated exposure to *Gentamicyn* in vitro will change non ESBL-*Gentamicyn* susceptible *Escherichia coli* into ESBL *Gentamicyn* resistant *Escherichia coli*.

Methods: This was an experimental study with 30 samples of non ESBL-*Gentamicyn* susceptible *Escherichia coli* isolates identified from the Phoenix. Non ESBL-*Gentamicyn* susceptible *Escherichia coli* was tested by giving exposure to *Gentamicyn* for 14 days, then ESBL screening was tested by *Cefotaxime* exposure to the results of *Gentamicyn* exposure.

Result: There were 4 isolates of *Escherichia coli* which experienced changes in phenotype into *Gentamicyn* resistant *Escherichia coli*. The rest of it still susceptible to *Gentamicyn* on days 2, 4 and 10. Furthermore, the *Escherichia coli* isolates were both susceptible to *Gentamicyn* and those that had phenotypic changes become resistant to *Gentamicyn* after exposed to *Cefotaxime* as an ESBL screening. There are 8 (26.7%) isolates that are still susceptible to *Cefotaxime* and 18 (60%) isolates that have been transformed into ESBL-*Gentamicyn* susceptible *Escherichia coli*. Isolates of 4 (13.3%) *Gentamicyn*-resistant *Escherichia coli* are then exposed to *Cefotaxime* and obtained all isolates is resistant to *Cefotaxime*.

Conclusion: Repeated exposure of *Gentamicyn* for 14 days in vitro was not significantly related to the phenotypic changes of non ESBL-*Gentamicyn* susceptible *Escherichia coli* isolates into ESBL-*Gentamicyn* resistant *Escherichia coli* (P = 0.550, Phi=0.237).

Introduction

The development of bacteria that have become resistant to antibiotics can complicate the treatment process. One of

the causes of antibiotic resistance is the inappropriate use of antibiotics. Some resistant bacteria that often appear include methicillin-resistant *Staphylococcus*

epidermidis, *Vancomycin-resistant Enterococci*, Gram-negative bacteria that are resistant to the β -lactam group (Desiyana, 2008).

The use of antibiotics that are not following existing resistance patterns can cause bacterial resistance to an antibiotic. One of the principles behind the emergence and spread of resistance between bacteria is the prevalence of resistance, which is directly proportional to the number of antibiotics used in various treatments. This is illustrated by the increase in antibiotic resistance in several countries that do not limit the use of antibiotics (Elliot *et al.*, 2013). Therefore, it is necessary to make an effort to determine the suitability of using antibiotics based on the results of culture and bacterial sensitivity tests.

Gentamycin is an *Aminoglycoside* derivative antibiotic that is very significant, especially because of its role against Gram-negative bacteria. This compound is used for bacteria that are resistant to other antibiotics. The mechanism of *Gentamycin* action is by binding irreversibly to the 30S subunit of the bacterial ribosome which results in inhibiting protein synthesis and causing an incorrect translocation of the genetic code. *Gentamycin* is bactericidal. *Gentamycin* is effective against a wide range of Gram-negative bacterial strains including *Escherichia*, *Enterobacter*, *Klebsiella*, *Proteus*, and *Pseudomonas*

species. For against Gram-positive microorganisms, *Gentamycin* is effective for *Staphylococcus aureus* and *Staphylococcus epidermidis*.

The research conducted by Winarto in 2004 - 2005, regarding the prevalence of ESBL (Extended Spectrum Beta-Lactamase) bacteria from blood specimens at Dr. Kariadi General Hospital, it was stated that the pattern of the effectiveness of *Gentamycin* antibiotics against ESBL bacteria was > 40%. The effectiveness of the antibiotic *Gentamycin* against various kinds of bacteria was varies, which against *Acinetobacter baumannii* by 40%, *E. coli* ESBL 63%, *Klebsiella aerogenes* 70%, *Klebsiella pneumoniae* ESBL 71.5%, and even against *Pseudomonas aeruginosa* by 92.5%, so the authors feel the need to changes research in the effectiveness of the antibiotic *Gentamycin* against *E. coli* ESBL.

The change in sensitivity to *Gentamycin* was influenced by the genes encoding *Acetyltransferase* *aac* (3) - II α and *aac* (3) - VI α which in the R. plasmid where if the bacteria were exposed to *Gentamycin* continuously then *Acetyltransferase* *aac* (3) - II α and *aac* (3) - VI α will be expressed by releasing the enzyme *N acetyltransferase*. Then the enzyme will influence the bacteria to change its catch point in the 30S Ribosome sub-unit.

In the plasmid, several other resistant genes are likely to be ESBL coding genes, namely BlaTEM, BlaSHV, and CTX, so that if the *aac* (3) - II α and *aac* (3) - VI α *Acetyltransferase* genes in plasmids are expressed due to repeated exposure to *Gentamycin*, the ESBL gene will also expressed the bacteria changed, which initially was *Gentamycin* susceptible *E. coli* non-ESBL, which turned into *Gentamycin* resistant producing ESBL *E. coli*.

Methods

This research is an experimental study by providing treatment and observation of non-ESBL *E. coli* bacteria from urine culture. This study used a pre-post test only design, where the test was conducted at the beginning and the end of the study to see the changes that occurred after the treatment was carried out. The study of the population was clinical isolates of *E. coli* stored from urine specimens in the Clinical Microbiology Unit of Dr. Soetomo Hospital, Surabaya. The research sample was clinical isolate *E. coli* which stored from urine specimens and was susceptible to *Gentamycin* and non-ESBL in the Clinical Microbiology Unit of the Dr. Soetomo Surabaya Hospital from May to August 2019.

So for this study we used 30 isolate of susceptible *Gentamycin* non-ESBL *E. coli*. The sample's inclusion criteria are *E. coli*

isolate which susceptible to *Ceftazidime*, *Cefotaxime*, *Ceftriaxone*, and *Cefoperazone Sulbactam*; these bacterial isolates have been identified and tested for antimicrobial sensitivity using an automatic technique (Phoenix TM or Vitek 2); *E. coli* which susceptible to *Gentamycin*. And the exclusion criteria is stored *E. coli* isolates that do not grow.

A sampling of bacterial clinical isolates from urine specimens was carried out using a consecutive sampling technique. Each sample that meets the research criteria is taken so that the required sample size is met. The research was conducted at the Clinical Microbiology Unit of Dr. Soetomo Hospital, Surabaya. From May 2019 - August 2019. The main material that used in this research was non-ESBL *E. coli* bacterial, isolates stored from the Clinical Microbiology Unit of Dr. Soetomo Surabaya. Additional materials used in this study were Mueller-Hinton agar medium, 30 μ g *Cefotaxime* antibiotic disc, and 10 μ g *Gentamycin*.

Result and Discussion

The samples of this study were 30 *Escherichia coli* isolates obtained from clinical specimens taken by consecutive sampling. From May 2019 to August 2019 samples were collected. *E. coli* isolates that were susceptible to *Gentamycin* non ESBL obtained from the automatic phoenix

machine were retested using the Kirby-Bauer method. The re-sensitivity test using the Kirby-Bauer antibiotic disk diffusion method was carried out to equate the method used during the ESBL screening and confirmation test and to the sensitivity of *Gentamycin*.

All isolates that met the inclusion-exclusion criteria were repeatedly exposed to *Gentamycin* (CN) discs for 14 days. The exposure was carried out every day in agar media containing MH agar using *Gentamycin* discs with a maximum length of study of 1-14 days. If within 1-14 days of the study, a positive result of *Gentamycin* resistance is obtained, then it will be continued by giving *Cefotaxime* exposure to

screen for ESBL. At the beginning of the research, after the *E. coli* obtained from the automatic phoenix machine was then retested using the Kirby-Bauer method, it was found that 30 (100%) *E. coli* isolates were susceptible to *Gentamycin* and susceptible to *Cefotaxime*.

Then the 30 *E. coli* isolates were exposed to *Gentamycin* discs for 1-14 days. Every day, it was observed whether there were phenotypic changes in the *E. coli* isolate. Isolates that were still resistant to *Gentamycin* were replanted on MH agar media and then exposed to *Gentamycin* discs. This was done continuously for 14 days.

Table 1. *E. coli* Resistance to Exposure of *Gentamicyn* 10ug with Kirby-Bauer Method (total n= 30)

No	Exposure	Exposure of <i>Gentamycin</i> 10µg	
		Sensitivity	Resistance
1	Day - 2	1 (3,3%)	29 (96,7%)
2	Day - 4	1 (3,3%)	28(93,3%)
3	Day - 10	2 (6,7%)	26(86,7%)

From the research, it was found that the *E. coli* phenotype changes from *Gentamycin* susceptible to *Gentamycin* resistance. These changes occurred on day 2 of 1 isolate of *E. coli* (3.3%), day 4 of 1

isolate (3.3%), and day 10 of 2 isolates of *E. coli* (6.7%). The next stage is that *E. coli* which has undergone a phenotypic change is tested using a Cefotaxim disc as an ESBL screening.

Table 2. *E. coli* Gentamycin Resistance to Exposure of Cefotaxime 30ug with Kirby-Bauer Method (total n= 30)

No	Exposure	Exposure of Cefotaxim 30 µg	
		Sensitivity	Resistance
1	Day - 1	0 (0%)	4 (100%)

The results showed that 4 *E. coli* isolates that had changed their phenotypes to Gentamycin-resistant *E. coli* were also phenotypically changed to *E. coli* ESBL. Furthermore, after the completion of the

study time of 14 days, 26 isolates of *E. coli* that were susceptible to Gentamycin were exposed to Cefotaxim discs as ESBL screening.

Table 3. *E.coli* suseptibel Gentamycin Resistance to Exposure of Cefotaxim 30µg with Kirby-Bauer Method (total n=26)

No	Exposure	Paparan Gentamycin 10µg	
		Sensitivity	Resistance
1	Day - 1	8 (30,8%)	18 (69,2%)

The results showed that 8 isolates of *E. coli* non-ESBL (30.8%) and 18 isolates of *E. coli* (69.2%) had phenotypic changes to *E. coli* ESBL. From the statistics, it was found that there was no significant relationship between Gentamycin susceptible *E. coli* non-ESBL and Gentamycin ESBL resistant *E.coli* ($P = 0.550$, $\Phi = 0.237$).

In this study, 30 *E. coli* isolates were exposed to Gentamycin. The results showed that *E. coli* isolates had phenotypic changes from Gentamycin susceptible *E. coli* to Gentamycin resistant *E. coli*. This change occurred on day 2 in 1 isolate, day 4 in 1 isolate and day 10 in 2 isolates. So in total, 4 *E. coli* isolates that had phenotypic

changes from Gentamycin susceptible *E. coli* to Gentamycin resistant *E. coli*.

This is related to the ability of bacteria to adapt to their environment. The presence of Gentamycin in the environment makes *E.coli* try to spread the gene coding for Gentamycin resistance via plasmids. Bacterial cells can respond to antibiotics so that they become resistant. These mechanisms include a decrease in the concentration of intracellular antibiotics of bacteria, changes in antibiotic molecules, and changes in antibiotic targets of action (Munita *et al.*, 2016).

In this study, the results showed that *E. coli* experienced a phenotypic change from Gentamycin susceptible *E. coli* to Gentamycin resistant *E. coli*. This is due to

the gene encoding the resistance code for *Gentamycin* Antibiotics, namely Aseltitransferase $\alpha\alpha\alpha$ (3) - II α and $\alpha\alpha\alpha$ (3) - VI α which are in plasmid R, if bacteria are exposed to *Gentamycin* continuously then Aseltitransferase $\alpha\alpha\alpha$ (3) - II α and $\alpha\alpha\alpha$ (3) - VI α will be expressed by releasing the enzyme N acetyltransferase. Then the enzyme will influence the bacteria to change their catch point in the 30S Ribosome sub-unit.

From the research, it was found that 4 *E. coli* isolates experienced phenotypic changes, but the rest remained susceptible to *Gentamycin* because the resistance mechanism of each antibiotic class could be different from other groups. Some researchers mention cross-resistance between different antibiotic classes (Talan et al., 2016). Furthermore, both *E. coli* isolates that were still susceptible to *Gentamycin* and those who had undergone phenotypic changes to be *Gentamycin* resistant were exposed to *Cefotaxime* as an ESBL screening. The results obtained on exposure to *Gentamycin* susceptible, *E. coli* with *Cefotaxime* obtained have the following results; 8 (30.8%) isolates that were still susceptible to *Cefotaxime* and 18 (69.2%) isolates that had turned into *Gentamycin* ESBL susceptible *E. coli*.

The results of 4 isolates *E. coli* resistant to *Gentamycin* (100%) after being exposed to *Cefotaxime*, all isolates were

resistant to *Cefotaxime*. This is following research conducted by Amin (2017) from the Clinical Microbiology Unit of the Dr. Soetomo Surabaya Hospital, where in this study there was a change in phenotypic properties from 4 (25%) non-ESBL *E. coli* isolates to ESBL *E. coli* after being exposed to Ciprofloxacin. The phenotypic change from *Gentamycin* susceptible *E. coli* non-ESBL to *Gentamycin* ESBL resistant *E. coli* is due to exposure to a class of antibiotics, in this case *Gentamycin* can cause cross-resistance to other antibiotic classes, in this case, the beta-lactam group. Resistant strains can spread the resistant genes that are in their mobile gene to other bacteria horizontally, allowing viable bacteria that initially do not have a resistant gene to turn into a resistant strain. Conjugation is the most frequent gene transfer mechanism (Thacker D James et al., 2012). From the statistics, there was no significant relationship between *Gentamycin* susceptible *E. coli* non-ESBL and *Gentamycin* ESBL resistant *E. coli* after being exposed to *Gentamycin* disk for 14 days (P = 0.550, Phi = 0.237).

Conclusion

The conclusion that can be drawn from the results of this study is that. Repeated exposure to *Gentamycin* for 14 days was not statistically significant to cause changes in the phenotype of non-

ESBL *Gentamycin* susceptible *Escherichia coli* isolates to *Gentamycin*-resistant *Escherichia coli* isolates.

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The Effect Of Dawood's Fasting In Removing Total Blood Cholesterol Levels In Surabaya Hidayatullah Islamic Boarding School's Student

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ABSTRACT

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Background: Hypercholesterolemia is a risk factor for causing death at a young age. The World Health Organization reported in 2002 that 4.4 million deaths were caused by hypercholesterolemia, or 7.9% of the total number of deaths at a young age. Hypercholesterolemia is a condition in which cholesterol levels in the body exceed normal levels. One way that can be done to prevent hypercholesterolemia is to control diet, namely by fasting. Dawood's fasting is one of the obligatory fasts of Islam which is done with one-day fasting and one-day not.

Objective: This study aims to determine the effect of Dawood's fasting in reducing total blood cholesterol levels in Hidayatullah Islamic Boarding School students in Surabaya.

Methods: This study was designed with a quasi-experimental study research method using a comparative pre-test post-test non-equivalent control group design. The sample in this study was divided into two groups, namely one control group and one treatment group from the sample selected by purposive sampling. The population studied were students of the Hidayatullah Islamic Boarding School in Surabaya.

Result: The results of statistical analysis using the Wilcoxon signed-rank test showed an effect of Dawood's fasting in reducing total blood cholesterol levels in Hidayatullah Islamic Boarding School students in Surabaya.

Conclusion: From research result that has been done, it can be concluded that there is an effect of Dawood's fasting in reducing total blood cholesterol levels in Hidayatullah Islamic Boarding School students in Surabaya.

Introduction

Hypercholesterolemia is a risk factor for causing death at a young age. The World Health Organization report in 2002

noted that hypercholesterolemia causes 4.4 million deaths or 7.9% of the total number of deaths at a young age. Hypercholesterolemia is a condition where

cholesterol levels in the body exceed normal conditions (Fikri, Nursalam, & Has, 2010). In Indonesia, the prevalence of hypercholesterolemia at the age of 25-34 years is 9.3%, while at the age of 55-64 years, it is 15.5%. Risk factors for the occurrence include genetic factors, diet, and lack of exercise activity. The WHO report states that in 2002, there were 4.4 million CHD deaths due to hypercholesterolemia, or 7.9% of the total number of deaths at a young age (Batjo, Assa, & Tiho, 2013). In patients with hypercholesterolemia generally found in adults. In men, cholesterol increases from the age of 35 to the age of 50 years. A study in Thailand in 2006 showed that patients with hypercholesterolemia in men were dominated by the age of 30-39 years (Yani, 2015).

Total cholesterol is the amount of LDL, HDL, and other fats in the blood (British Heart Foundation, 2015). The results of the measurement of total cholesterol levels are categorized into normal (<200 mg/dL), high limit (200-239 mg/dL), and high (\geq 240 mg/dL) (Rizma, 2017). Cholesterol is transported in blood plasma as lipoproteins. The four main groups of important lipoproteins are chylomicrons, VLDL, LDL, and HDL. Chylomicrons transport lipids resulting from digestion and absorption; VLDL transports triacylglycerol from the liver;

LDL transports cholesterol to tissues, and HDL carries cholesterol to tissues and returns it to the liver excretion (Marfu'ah & Sari, 2018).

Nutrient intake can influence total cholesterol levels, namely from foods that are a source of fat. Increasing fat consumption by 100 mg/day can increase total cholesterol by 2-3 mg/dL (Yani, 2015). Frequent consumption of high-fat foods is the main cause of increasing total cholesterol levels in the blood. The results of Sulastris's research show that cholesterol levels will decrease along with low intake of fatty foods. Cholesterol levels that exceed normal limits will trigger the process of atherosclerosis, coronary heart disease, stroke, and high blood pressure (Yoeantafara & Martini, 2017). Cholesterol levels in the blood above normal levels are called hypercholesterolemia (Marfu'ah & Sari, 2018).

Handling is needed to control blood cholesterol levels to prevent further effects of hypercholesterolemia (Yani, 2015). Current therapy for hypercholesterolemia is regulating food intake, exercise, pharmacotherapy, and surgery / bariatric surgery. Fasting is one way to prevent food intake regulation.

Fasting is a Muslim obligation known to be beneficial for the body and begins to be used in children from the age

of 7 years. In addition to being worshiped, fasting also has health benefits and is safe for children, even for people with type 1 diabetes. Fasting can reduce ApoB levels and increase serum ApoAI levels so that fasting can regulate apolipoprotein metabolism and change total cholesterol and serum HDL levels. There are several other types of fasting, such as the Monday-Thursday fast and the Dawood's fast. Monday-Thursday fasting is done regularly every Monday and Thursday, while Dawood's fast is fasting that is done alternately (fasting a day and not) (Triliana & Airlangga, 2018).

Fasting can reduce blood LDL levels to avoid hypercholesterolemia (Triliana & Airlangga, 2018) automatically. In the period before and after the Dawood's fast, HDL levels may increase between 1 and 14 mg/dL, LDL levels may decrease between 1 and 47mg/dL, total cholesterol levels may decrease between 5 and 88 mg/dL, and triglyceride levels may decrease between 3 and 64 mg. /dL (Santos & Macedo, 2018).

Based on the description of the background above, the researchers wanted to find out more about the relationship between Dawood's fasting and total cholesterol levels in the blood of students who underwent Dawood's fasting.

Methods

This research is a quasi-experimental study using a comparative pre-test post-test non-equivalent control group design. This study was designed to fulfill the research objective of knowing the effect of Dawood's fasting in lowering total blood cholesterol levels. The sample in this study was divided into two groups, namely one control group and one treatment group from the sample selected by purposive sampling. The population studied was the students of the Hidayatullah Islamic Boarding School in Surabaya.

The research sample used in this study was the students of Hidayatullah Islamic Boarding School Surabaya who met the criteria for sample acceptance and were divided into two groups, namely the control group and the treatment group. The control group is the group that did not undergo the Dawood's fast for six consecutive weeks and was willing to participate in the study as evidenced by informed consent after being given information for consent. A treatment group is a sample group that is willing and able to undergo Dawood's fasting for six consecutive weeks and is willing to participate in research as evidenced by informed consent after being given information for consent. Sample selection was carried out by the purposive sampling method until the number of samples that

met the sample acceptance criteria was fulfilled. Simple random sampling would be carried out to determine whether volunteers were included in the control group or treatment group.

The research was carried out at the Hidayatullah Islamic Boarding School Surabaya, Jalan Kejawan Putih Tambak VI/1 Keputih Sukolilo Surabaya 60111 and the Clinical Pathology Laboratory of RSUD Dr. Soetomo Surabaya in October 2019 until the second week of November 2019.

The blood sampling procedure was carried out before performing the Dawood's fast and at the beginning of the 7th week after completing the Dawood's fast. The data that has been collected will be analyzed using statistical analysis software. Before being analyzed, the normality test data first used the Shapiro-Wilk test because the number of samples was <50 . The distribution is said to be normal if $p > 0.05$. If the results obtained are typically distributed, then the Paired t-test is carried out. However, if it is not normally distributed, the non-parametric Wilcoxon-signed rank test is used.

Result and Discussion

This research is an experimental laboratory study that aims to determine the

effect of Dawood's fasting on reducing total cholesterol levels in human blood, conducted at the Hidayatullah Islamic Boarding School Surabaya. This study used a pre-test and post-test control group design because the measurements were carried out twice before Dawood's fast and at the end of Dawood's fast.

In this study, researchers used two groups, namely the control group and the treatment group. In the control group, the subject did not come fast since the beginning of the study but was given the same food between respondents. In comparison, the treatment group did Dawood's fasting for six weeks with the same dawn meal and iftar menus as the control group. Both the control and treatment groups were checked for total blood cholesterol levels before and at the end of the study using Easy Touch brand cholesterol strip with strip packaging code 9337 with the normal level value 155 mg/dL – 252 mg/dL. Researchers took 16 people each in each group in both the treatment and control groups because there were several factors such as the respondent being sick, resigned, and included in the exclusion criteria.

Table 1 Characteristics of subjects based on age, weight, body mass index (BMI), and waist-hip ratio (WHR)

No	Variable	n respondent	
		Treatment n = 16	Control n = 16
1.	Age		
	18 – 20 years old	9 (56%)	5 (31%)
	21 – 23 years old	6 (38%)	11 (69%)
	24 – 26 years old	1 (6%)	0 (0%)
	27 – 30 years old	0 (0%)	0 (0%)
2.	Body Mass Index (BMI)		
	<i>Underweight</i>	7 (44%)	4 (25%)
	Normal	9 (56%)	11 (69%)
	<i>Overweight</i>	0 (0%)	1 (6%)
	Obesity 1	0 (0%)	0 (0%)
	Obesity 2	0 (0%)	0 (0%)
3.	Waist – hip ratio (WHR)		
	< 0,95 = low risk of CVD	16 (100%)	16 (100%)
	≥ 0,95 = high risk of CVD	0 (0%)	0 (0%)

Table 1 above shows the distribution of age, BMI, and WHR in research subjects. The age of the research subjects all met the inclusion criteria. All the subjects ranged from 18-30 years, with the most significant frequency in the treatment group being in the age range 18-20 years old as many as nine people (56%), then the age range 21-23 years old as many as six people (38%) and the age range of 24-26 years-old is one person (6%). Most of the subjects in the non-fasting group were in the age range 21-23 years old, as many as 11 people (69%) and the age range 18-20 years old as many as five people (31%). This data shows that the age distribution in the treatment group is relatively younger than the non-fasting group.

The distribution of BMI calculated based on body weight and height of the subject with the formula $BW \text{ (kg)} / BH^2 \text{ (m}^2)$ in the most treatment group with normal BMI was nine people (56%), followed by an underweight BMI of 7 people (44%). The distribution of the control group is different from the treatment group, namely the most normal BMI is 11 people (69%), BMI underweight is five people (25%), and BMI overweight is one person (6%). BMI can be used to assess nutritional status so that, in general, subjects in the non-fasting group showed better nutritional status than the treatment group.

WHR calculated based on the ratio of waist circumference, and hip circumference (in cm) showed that all

subjects in the non-fasting and fasting group had a WHR value of < 0.95 (100%). A WHR value < 0.95 indicates a low cardiovascular risk, while a value > 0.95 indicates a high cardiovascular risk.

Based on the general description of research subjects, it was found that all research subjects were in a state of nutritional status who were not obese.

Table 2 Descriptive data of the total blood cholesterol level (mg/dL)

Variable	Group	Pre-test	Post-test
		Mean ± SD	Mean ± SD
Total cholesterol level	Not fasting	246 ± 35.40	260,75 ± 29.35
	Fasting	220,94 ± 43.55	240,5 ± 22.46

From the table, the mean of the treatment group in the pre-test was 220,94 mg/dL while the post-test result was 240,5 mg/dL. The average results show an increase in total blood cholesterol levels in the post-test compared to the pre-test, but still within normal levels. The average total blood cholesterol level in the control group in the pre-test was 246 mg/dL while the post-test results were 260,75 mg/dL. The average results show that the pre-test is still normal but the post-test has a total

cholesterol level that exceeds the normal level according to the Easy Touch brand cholesterol strip packaging, which is 155 mg/dL – 252 mg/dL.

Based on the table above, it can be concluded that the post-test average of the treatment group is much lower and is still within normal levels of total blood cholesterol compared to the post-test average of the control group which exceeds normal limits.

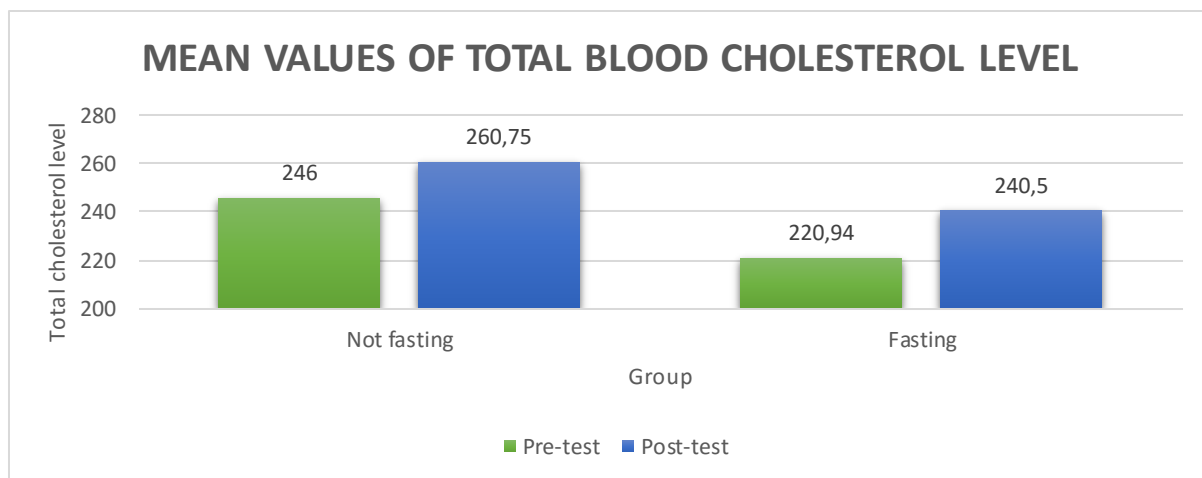


Figure 1 Bar chart of the mean values of total blood cholesterol levels pre and post-test of the treatment and control group

Based on the table above, it can be concluded that the post-test average of the treatment group is much lower and is still within normal levels of total blood cholesterol compared to the post-test average of the control group, which exceeds normal limits.

Table 3. Wilcoxon-signed rank test results

	Wilcoxon-signed rank test
Z	-2,421
Asymp. Sig. (2-tailed)	0,015

Based on the Wilcoxon-signed rank test results above, the significance value is 0,015, so that there is an effect of Dawood's fasting in lowering total cholesterol levels in human blood.

Based on Table 2, we saw an increase in the average total blood cholesterol level from pre-test to post-test in both the treatment and control groups. Each group experienced an average increase, but the control group experienced a lower average increase than the treatment group's average increase.

Based on the results of the study, it is known that the mean total blood cholesterol level of the treatment group at the pre-test was 220,94 mg/dL, which is lower than the mean total blood cholesterol level of the control group at the pre-test, which was 246 mg/dL. However, both

were still within the normal range or normal limit. Meanwhile, the control group's mean total blood cholesterol level at the post-test was 240,50 mg/dL, which was also lower than the average post-test blood cholesterol level in the control group, which was 260,75 mg/dL. It is known that the mean total blood cholesterol level of the control group during the post-test has exceeded the normal limit according to the guideline for normal values of cholesterol levels on the Easy Touch brand cholesterol strip with strip packaging code 9337.

After analyzing the data using the Wilcoxon signed-rank test, the results showed an effect of Dawood's fasting in lowering total blood cholesterol levels in Hidayatullah Islamic Boarding School students in Surabaya. This effect is corroborated by a review of articles written by Meng et al. (2020). They reviewed the effects of intermittent fasting and energy-restricted diets on lipid profiles (Meng et al., 2020). The article concludes that compared to non-dietary controls, intermittent fasting and an energy-restricted diet effectively improved circulating total cholesterol, LDL cholesterol, and TG concentrations but had no significant effect on HDL cholesterol concentrations. Several factors may influence this effect that may inform future

clinical practice and research (Meng et al., 2020).

The results of this study are from several previous studies that support theories about the body's metabolism. When the body lacks glucose, it will trigger the hormones glucagon and epinephrine to convert glycogen, which is called glycogenolysis (Kaharuddin, 2015). In order To avoid hypoglycemia, the body limits the conversion of glycogenolysis and starts lipolysis (Syafiq, 2002). During fasting, there is a decrease in fat utilization and a decrease in the Basal Metabolic Rate (BMR), reducing total cholesterol levels (Putranto, 2016). There is an increase in free fatty acid oxidation during lipolysis, which causes VLDL synthesis and lowers LDL (Izzaturahmi, 2017).

The habits of respondents who routinely carry out physical activities and diets that control the intake of foods containing animal fats can also influence the external factor, which can cause a decrease in cholesterol levels.

Conclusion

From research result that has been done, it can be concluded that there is an effect of Dawood's fasting in reducing total blood cholesterol levels in Hidayatullah Islamic Boarding School students in Surabaya.

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The Role of Religion and Spirituality in Managing Residual Schizophrenia: Article Review

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ABSTRACT

Background: Residual Schizophrenia is a chronic condition of schizophrenia characterized by a history of leastwise one psychotic episode with more prominent negative symptoms. Schizophrenic patients who have persistent psychotic symptoms and patients with residual schizophrenia should receive adequate pharmacotherapy, and may consider additional cognitive therapy, as it has been shown to help reduce relapse rates, reduce psychotic symptoms, and improve or stabilize the patient's mental state.

Objective: To determine the role of religion and spirituality in the management of patients with residual schizophrenia.

Methods: The design of this research is a literature review or library review, which is a systematic, direct, and reproducible research method by identifying, evaluating, and synthesizing published research.

Result: Patients with a higher level of religion or spirituality or their strong personal belief system are more likely to use positive appraisal to deal with their illness or problem which includes giving positive meaning to the situation and being optimistic.

Conclusion: The presence of religion and spirituality help the coping mechanisms of residual Schizophrenia patients which also improves patient management, accelerate the healing process, and increases QOL of patients.

Introduction

Residual schizophrenia is a chronic form of schizophrenia with a history of at leastwise distinct psychotic episode and progressing to more foremost negative symptoms. Negative symptoms that appear include psychomotor decline, decreased activity, passivity, lack of initiative, buildup of affect, decreased non-verbal expression, and poor self-care and social

functioning. Reducial schizophrenia does not experience prominent positive psychotic symptoms (de Gracia Dominguez et al., 2009; Hurlock, 2011; Maramis, 2009).

Older residual schizophrenic patients are less likely able to complete their education, pursue their career or be in a long-term romantic relationship. Family support are very important for them, which

are a support system for their lives, but so far their parents are unable to provide care for them when the schizophrenic patient gets older. Residual schizophrenic patients also tend to be neither married nor have children, because these conditions are more likely to live alone. Schizophrenic patients who have persistent psychotic symptoms or residual schizophrenia in addition to receiving adequate pharmacotherapy, are also considered for additional cognitive therapy that has been shown to help reduce relapse rates, reduce psychotic symptoms, and improve the patient's mental state. Psychoeducation can empower patients to understand their illness, help them manage their illness independently, help them recognize symptoms of recurrence, and seek emergency help if they experience symptoms of recurrence (Khan et al., 2017).

Religion can be broadly defined as spirituality (related to the transcendent relationship to the meaning of everyone's life) and religiosity (related to certain behaviors, social and doctrines). Spirituality can be considered as the "Essence of Man", many theorists believe that spirituality understands the personal meaning of everyone. In addition, individual and community spirituality is defined based on values, experiences, beliefs and practices that emerge from the

individual cultures, families, and religious communities. Religion and spirituality proffer answers to various problems of human life. Therefore, it is common that people with schizophrenia believe that prayer and strengthening religious beliefs are beneficial in overcoming the symptoms and recovery process of schizophrenic patients (Shah et al., 2011a).

The purpose of this article is to determine the role of religion and spirituality in the management of patients with residual schizophrenia.

Methods

The design of this research is a literature review or library review, which is a systematic, direct, and reproducible research method by identifying, evaluating, and synthesizing published research. In this study, the authors searched for literature with the keywords "residual schizophrenia, spirituality" to obtain literature sources from journal database websites, including PubMed, Science Direct, and Google Scholar, and supported by various sources such as textbooks and other literature.

Results and Discussion

1. Coping Mechanisms in Residual Schizophrenia

Negative symptoms consist of psychomotor delay, decreased activity,

affective buildup, passiveness and lack of initiative, poverty of speech, decreased nonverbal expression, and poor self-care and social functioning (Maslim, 2013; Papilaya, 2019).

Coping mechanism is interpreted as a person's behavioral and cognitive efforts to maintain internal and external resources to the stressful environment. In order to deal with daily stressors and adapt to distressing symptoms, patients with schizophrenia use a variety of coping strategies. These individuals often use avoidance or distraction coping, use of alcohol or drugs, and social isolation to manage symptoms and reduce distress. Some studies have found that patients often use 'seek help' or 'seek social support' to subsist with psychotic and non-psychotic symptoms and everyday stress (Shah et al., 2011a, 2017).

Schizophrenic patients tend to be more passive towards problem solving. They often use emotion-focused and passive strategies to deal with stressful situations. They may avoid confronting the stressor than considering possible courses of action or trying to solve a problem. Coping strategies differ from stressor to stressor and schizophrenic patients may encounter certain stressors that may be beyond their control. Several attempts have been made to explore

alternative frameworks for dealing with people with schizophrenia. Patients with higher religiosity or strong belief systems are more likely to use positive appraisal to cope with their illness, which is described as giving positive meaning to a situation or an optimistic attitude (Shah et al., 2011b, 2017).

2. The Role of Religion and Spirituality on Coping Mechanisms

Schizophrenia patients use various coping strategies to conform to their symptoms. Besides the personality structure that plays an important role, coping mechanisms are also influenced by one's religion and spirituality. Religion and spirituality are seen as useful in assisting coping mechanisms, solve a problem, a source of social support, and a sense of meaning when the patient is confused about the problem. Religion and spirituality provide examples in the holy verses that teach a positive, optimistic, and hopeful view of life towards a problem, teach that life is not alone, invites to establish good relationships with fellow humans and relation with God, and teaches that God has power over their life (Shah et al., 2011b).

For human life, religion and spirituality have an important role in obtaining the purpose and meaning of

life. In general, religion and spirituality are interrelated, but some consider them as two different concepts. Spirituality involves a person's way of fulfilling what they believe to be the principle of life, discovering the meaning of life and their connection to the universe that can extend across beliefs and cultures (Shah et al., 2011a).

Spirituality is apprehensive with direct experience with a higher latent awareness within a person, whereas religion is a set of guidelines, practice and beliefs adopted and followed by an individual and a group of religious communities. In another words, a person may be religious but not spiritual, may be spiritual but not religious, or may be do both spiritually and religious. Keep in mind that spirituality and religiosity are not always related. Religion and spirituality are vertical relationships to beliefs that are unique and personal to every person (Verghese, 2008).

3. The Role of Religion and Spirituality in the Management of Residual Schizophrenia

Spirituality and religion are highly individual and unique to each person. Spirituality supports and motivates individuals to seek meaning in life. In Eastern ideologies (example. Buddhism) in

four centuries past, people recognizing the relationship between mental health and spiritualit. Eventhough the, efforts to take a holistic oncoming to comprehend the individual found the way for research into the relationship of spirituality to mental health in recent decades. Several studies have identified a mechanism for the potential benefit of religious coping mechanisms that are thought to be important mediators (Shah et al., 2011b).

Research by Sari and Wijayanti (2014), examining the spiritual needs of schizophrenic patients living in Islamic boarding schools stated that schizophrenic patients still feel close to God through religious activities, such as carrying out obligations and worship according to their religion. The results of this study are consistent with other theories and research, that spirituality is a direct experience by individuals with a higher level of awareness within a person (internal factors) and closer to forces outside of themselves, namely God (external factors) (Sari & Wijayanti, 2014).

Participants in the study felt different things between them feeling close to God, feeling peace of mind, and being able to concentrate well in carrying out worship. Participants also revealed that there were influences in their lives such as more stable emotions (Sari & Wijayanti, 2014).

Shah (2011) in his research which aims to quantify spirituality/religiosity and its relationship with coping mechanisms in residual schizophrenia patients. The study states that good spiritual, religious, or personal beliefs are connecting with active and adaptive coping abilities. The participants consisted of 103 people with residual schizophrenia are assessed using the Positive and Negative Syndrome Scale (PANSS) and the Ways of Coping Checklist (WCC) to assess the ability of coping mechanisms. Then they were also tested using WHO Quality of Life-Spirituality, Religiousness and Personal Belief scale (WHOQOL-SRPB) to assess religiosity and spirituality. The study concluded that understanding and assessing spirituality and religiosity can help in better disorder management in schizophrenia patients (Shah et al., 2011a).

In the relationship between spirituality and religiosity with socio demographic and clinical variables, there are aspects of “wholeness and integration” and “meaning and purpose of life”. These aspects were significantly higher in patients with the experience of formal education more than 10 years, when compared to those with less time of formal education. Scores of the “inner peace” aspect were significantly higher in urban background patients than to those from a rural. There is no significant difference

regarding gender, marital status, religion, family, and occupation (working and not working). (Shah et al., 2011a).

Shah, et al in another study that examined the role of spirituality to quality of life in residual schizophrenia patients which aimed to determine the relationship between spirituality and quality of life (QOL), and to identify whether spirituality contributed to other QOL domains (both physical and psycho-social status) in subjects with residual schizophrenia. Shah et al stated that spirituality and religiosity were beneficial in increasing the QOL of all their participants with schizophrenia. Therefore, in addition to the pharmacotherapy of schizophrenic patients, clinicians should also focus on spiritual and religious aspects, and encourage their patients to follow their spiritual beliefs and religious practices (Shah et al., 2011b).

Research by Fikriyah (2019) which examined the Case Study of Religious Behavior of Residual Schizophrenia Patients at the Mental Rehabilitation Foundation in Sidoarjo concluded that the management of Residual Schizophrenia requires comprehensive management. In addition to providing pharmacotherapy, religious therapy support is useful in helping the treatment of Residual Schizophrenia patients (Fikriyah, 2019).

Conclusion

Residual schizophrenia is a chronic condition that requires comprehensive management. In addition, while receiving pharmacotherapy to reduce psychotic symptoms, religion and spirituality support has also been shown to play a role in the coping mechanisms of residual Schizophrenia patients which contribute to improving patient management, accelerating healing, and increasing QOL of residual schizophrenic patients.

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Biomarkers of CRP, IL-6, and D-Dimer COVID-19 Patients That Are Giving Convalescence Plasma Therapy – Literature Review

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ABSTRACT

Background: Convalescent plasma therapy is the only antibody-based therapy used to treat COVID-19 Patients. The use of convalescent plasma therapy has been recommended by the FDA as a therapy for COVID-19 patients (FDA in Asep, 2020). Several routine biomarker parameters used as indicators in the diagnosis of COVID-19 are IL-6, CRP and D-Dimer. There was a change between the three biomarker values of IL-6, CRP and D-Dimer between COVID-19 patients on convalescent plasma therapy and COVID-19 patients who did not receive convalescent plasma therapy.

Objective: This review article is how effective of convalescent plasma usage as therapy for COVID-19 patients is by looking at changes in the biomarkers of IL-6, CRP and D-Dimer in patients receiving convalescent plasma therapy.

Methods: This literature review uses 3 fulltext articles obtained by combining keywords in an electronic database: Scopus, Cochrane Library, PubMed, and Google Scholar. Articles were eliminated using predefined inclusion and exclusion criteria, then analyzed systematically. The preparation of the discussion uses a systematic analysis based on the themes and topics of discussion obtained in the research article.

Conclusion: There were changes in the biomarker values of CRP, IL-6 and D-Dimer in COVID-19 patients who receiving convalescent plasma therapy and COVID-19 patients who did not.

Introduction

More than 30.6 million cases and the death of 950.000 people caused by COVID-19 have been reported to WHO. From 14 to 20 September 2020, there were almost 2 million new cases of COVID-19, representing a 6% increase over the previous week, and at the single week of the pandemic begin the highest number of

cases was reported (World Health Organization, 2020).

Common abnormalities of hematology in COVID-19 are thrombocytopenia, elevation of D-dimer levels, and lymphopenia. These changes are significantly more common in severe COVID-19 disease, and thus may serve as

a possible biomarker for those requiring hospitalization and ICU care.

The results of several studies indicate that the usage of convalescent plasma in patients recovering from Ebola, SARS-CoV, and H5N1 is effective. Serum taken from recovered patients can completely neutralize the cellular infectious ability of the isolated virus. Based on the research of Shen et al, reported that regulation of convalescent plasma have substance of neutralizing antibody in 5 critical cases, gave an improvement in their clinical status. However, the characteristics of these antibodies have not been studied in depth in conjunction with the patient's clinical manifestations.

Then the question arises whether a patient who has been given convalescent plasma therapy will show better routine biomarker results than patients who do not receive convalescent plasma therapy? Based on these questions, this literature review is intended to analyze the comparison of biomarkers patients who receiving a convalescent plasma therapy and COVID-19 patients not receiving convalescent plasma therapy. In addition, it will also be further identified how effective the convalescent plasma usage as therapy for COVID-19 is by looking at changes in the biomarkers CRP, IL-6 and D-Dimer in patients receiving convalescent plasma therapy.

Methods

Article searches were conducted in credible journals through 4 electronic databases (Scopus, Cochrane Library, PubMed, and Google Scholar). The keywords used were: C-Reactive protein level, D-Dimer level, Interleukin 6 level, convalescent plasma, and COVID-19 patients outcomes. The scope of the search was expanded to include a combination of Medical Subject Headings (MeSH) while making use of the Boolean operator combined with the keywords used. The articles obtained were then eliminated using the inclusion and exclusion criteria set by the author. The inclusion criteria used were: full text articles, research conducted in 2020 – 2021 and all studies containing CRP, D-Dimer, and IL-6 values. Meanwhile, the exclusion criteria used were all studies that did not use English or Indonesian. The preparation of the discussion uses a systematic analysis based on the themes and topics of discussion obtained in the research article.

Result and Discussion

A total of 3 full text articles were used in this literature review. There is one article published in 2020 and two articles in 2021. The research was taken in 3 different countries, namely Italy, China, and Iran. The characteristics of each article are described in the following table 1.1.

Convalescent Plasma Therapy (TPK)

Based on the diagnosis of Pneumonitis and the infection of SARS-CoV-2 treatment program, doctors in China turn to convalescent plasma transfusions, when drug therapy is unsatisfactory. Convalescent plasma is used as a last treatment to increase the survival chance of patients with acute respiratory syndrome infections. Although the potential for antivirals and immunomodulators is still being evaluated in COVID-19 patients, according to physiopathology, convalescent plasma therapy can reduce mortality (Hung in Sukohar, 2020).

The convalescent plasma therapy usage has been recommended by the Food and Drug Administration (FDA) since May, to health services and researchers regarding the use of convalescent plasma taken from recovered patients (FDA in Sukohar, 2020).

Convalescent plasma therapy is the regulation of passive polyclonal antibodies (Ab) to supply immediate immunity which has been used for more than a century to prevent and treat many infectious diseases and has been shown to reduce patient mortality in hospitals (Duan in Sukohar, 2020). Convalescent plasma therapy in 2009 H1N1 infection can reduce viral load, clear the respiratory tract, decrease serum cytokine response, and patient mortality

(Hung in Sukohar, 2020). In addition, convalescent plasma has been used as a therapy for Ebola virus outbreaks in Africa, based on research conducted by Edwards et al (in Sukohar, 2020) who reported that there was a reduction in mortality and no adverse reactions were found in the use of convalescent plasma therapy. In SARS Coronavirus and severe influenza, there was a significant decrease in the group of patients who had been treated with placebo or without therapy (Mair-Jenkins in Sukohar, 2020).

CRP and IL-6 in COVID-19 Patients

In COVID-19, an inflammatory processes occur in the body. Some evidence suggests that disease worsening in COVID-19 patients is closely related to dysregulation and excessive cytokine release. Observations in one study in Wuhan showed that patients who eventually died from complications of COVID-19 showed high interleukin (IL) 6, serum C-reactive protein (CRP), and ferritin, indicating that there was a hyperinflammatory process.

In a study on the interleukin-6 cohort conducted in China in 2020, it was found that the movement of the amount of IL-6 in patients who experienced an increase in serum interleukin, when compared at the time of admission to when they were declared cured of COVID-19, the

interleukin yield remained high so that the study supports its use for severity stratification (Zhang et al., in Haithani, 2021).

D-Dimer in COVID-19 Patients

Examination of hematological parameters becomes important especially in asymptomatic patients, suspected of having positive PCR results. Parameters that are often carried out in hematology and homeostasis examinations are Complete Blood, while for homeostasis include D-Dimer, Activated Partial Thromboplastin Time (APTT), and Prothrombin Time (PT) (Atna et al, 2021). In a case study by Luca Spezia et al (in Rostami, 2020), found that patients with COVID-19 experienced an increase in D-Dimer values.

Research conducted by Abdulgader et al (in Permana, 2021) concluded, cases of VTE in COVID-19 patients treated in the ICU showed a significant increase in D-Dimer levels, thus recommending anticoagulant prophylactic therapy. This increase in D-Dimer levels indicates plasmin-mediated hyperfibrinolysis, but it is interestingly not in accordance with the picture on Thrombo Elastography (TEG) which shows fibrinolysis Shutdown. The study of Uemura et al (in Kahar, 2021) found significantly high levels of D-Dimer

and fibrin/ fibrinogen degradation product (FDP) in COVID-19 patients.

Conclusion

There were changes in the biomarker values of IL-6, CRP and D-Dimer in COVID-19 patients who received convalescent plasma therapy and who did not.

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