

CHAPTER 1

PRELIMINARY

1.1 Backgrounds

Anaemia, a condition in which haemoglobin (Hb) concentration and/or red blood cell (RBC) numbers are lower than normal and insufficient to meet an individual's physiological needs (WHO, 2017), that affects 22.8% of the world's population (Gardner & Kassebaum, 2020). Anaemia is associated with increased morbidity and mortality in women and children, poor birth outcomes, decreased work productivity in adolescent and adults, and impaired cognitive and behavioural development in children (Chaparro & Suchdev, 2019). The most common cause of anaemia is iron deficiency (IDA), and non-nutritional causes included disease-related causes and genetic disorders. However, IDA and non-nutritional anaemia are frequently viewed as equal due to the significant role of iron in both conditions. Teenage or adolescence is a time for puberty. According to research by Isik Balci, et al (2012), pubertal growth spurts is one of the traits that makes age a factor for adolescent anaemia. According to a study by Alao et al (2009), food provision in boarding school is limited due to cost management which can cause inadequate food provision, which on a long-term cannot provide the students nutritional needs. This may cause anaemia on students in islamic boarding school, which as we know are in adolescence, a critical an important phase in a human life, where not only they are going through morphological changes and development, but also physiologically and psychologically.

According to the Indonesian national health research, the prevalence of anaemia in Indonesia was 11.9% in 2007 and had increased to 21.7% in 2013 (Ministry of

Health Republic of Indonesia, 2013). Iron-deficiency anaemia is the largest cause of years lived with disability in children and adolescents worldwide (Global Burden of Disease et al, 2017). Meanwhile, 15% of adolescent girls worldwide suffer from anaemia, with 6% in developed and 27% in developing countries. The prevalence of anaemia on adolescent itself varies. For instance, In Indonesia itself, based on a study by Runggu, et al (2016), the prevalence of adolescent anaemia was 32% and a retrospective study involving 709 laboratory records of Indonesian children and adolescents showed an IDA prevalence of 16% in the 5–11.9 years age group and 15.2% in the 12–18 years age group (Widjaja et al (2014). in Dembia, Ethiopia, the overall prevalence of anaemia among adolescent girls was 25.5%, (95%CI, 21.4, and 29.2) (Gonete et al,2018). Based on Isik Balci's research (2012), in the age range of 12 to 16 years old, found that the overall prevalence of anaemia was 5.6%. 8.3% of the girls and 1.6% of the boys were anaemic.

The prevalence of anemia among adolescents in Islamic boarding schools varies from study to study with different researched risk factors. Prevalence of anaemia among adolescent girls in Islamic Boarding School in Kediri City was 29.93% with only nutrition status researched (Sodik et al., 2018). In Ekayanti et al (2020), Students with mild anaemia were 38.1%, while 20.2% had moderate anaemia with age, nutritional status and menstruation status researched as risk factors. On another study in Kediri, there were 28 teenagers (29,1%) from 96 had anaemia with age, nutrition status, nutrition knowledge, physical activity, and length of menstruation researched as risk factors (Luftiasari & Yanuaringsih, 2020).

The prevalence of anemia among adolescents in Islamic boarding schools varies from place to place and tends to be higher than the national prevalence of anemia in Indonesia. Risk factors also vary from study to study. However, Bangkalan, one

of the cities with many Islamic boarding schools, has never been studied regarding the prevalence of adolescent anemia in Islamic boarding schools there. In this regard, the researcher is interested in examining the prevalence of anemia in adolescents and the risk factors for students at Islamic boarding schools in Bangkalan. This research will be conducted at the Kramat and Ar-Rohmany Al-Ishaqy Islamic Boarding Schools. By knowing the prevalence of adolescent anemia among students and determining significant risk factors, especially in Islamic boarding schools such as Kramat Islamic Boarding School and Ar-Rohmany Al-Ishaqy Islamic Boarding School, to be able to make preventive procedures in managing/treating students.

1.2 Formulation of The Problem

1. How is the prevalence of anaemia among students in Islamic boarding schools?
2. Is there any correlation between age and anaemia on adolescent students of Islamic boarding schools?
3. Is there any correlation between gender and anaemia on adolescent students of Islamic boarding schools?
4. Is there any correlation between nutrition and anaemia on adolescent students of Islamic boarding schools?
5. Is there any correlation between the duration of stay and anaemia on adolescent students of Islamic boarding schools?

1.3 Research Objectives

1.3.1 General Objective

The prevalence of anaemia in Islamic boarding school especially in Islamic boarding schools and the risk factors of the occurrence there.

1.3.2 Specific Objectives

1. Determine the prevalence of adolescent anaemia in Islamic boarding school.
2. To analyse the correlation between age and anaemia on adolescent students of Islamic boarding schools.
3. To analyse the correlation between gender and anaemia on adolescent students of Islamic boarding schools.
4. To analyse the correlation between nutrition and anaemia on adolescent students of Islamic boarding schools.
5. To analyse the correlation between the duration of stay and anaemia on adolescent students of Islamic boarding schools.

1.4 Research Benefits

1.4.1 Academic Benefits

To know more details on the prevalence of adolescent anaemia in Indonesian boarding schools and the risk for it to occurs on boarding students and evaluate previous research if there is a significant difference.

1.4.2 Medical/Clinical Benefits

By knowing the prevalence of adolescent anaemia among boarding school students, especially in Islamic boarding schools such as Kramat and Ar-Rohmany Al-Ishaqy Islamic boarding schools, to be able to create preventive procedures on managing/treating a islamic boarding school student before it occurs.