

What are the impacts of sports participation in the quality of living in children with

Haemophilia?

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Chapter 1- Introduction

1.1 Introduction

The proposed dissertation will be reviewing the relevant current literature “What are the impacts

of sports participation in the quality of living in children with haemophilia". The literature of the study will also construct in the study for exploring the relevant literature from different studies related to the topic and to address the aims, objectives and the topic of the proposed study. The literature of study has also study to collate and to critique from the practices (Böhmert, et al. 2018).

1.2 Definition of Key terms

1.2.1 Haemophilia

Haemophilia is the rare health condition in which blood from human body does not clot appropriately. This is mostly occurring and affecting men. The proteins are known as the factor of clotting work with different platelets for stop body from bleeding at the injury site. The individuals seems as the effectively raised in the health and social care of the patients because of the evidence based practices. The literature review will also allow the evidence related to the aims and topic of the with haemophilia have low amount of "Factor VII" or Factor IX" than normal individual. This shows that the individual seems to bleed for the longer time duration after an injury or cut.

1.2.2 Parents

Parents of an individual include "Father" or "Mother", they are the legal or parental caregiver for a child under their care.

1.2.3 Physical health

Physical health is stated of an individual for being free from injury or illness. This also cover the vast range of regions which include healthy weight, healthy diet, dental health, sleep, hygiene and many other factors. The physical health of an individual, especially in children, is important for their wellbeing and development.

1.2.4 Sports

Sports is known as the activity which involve the “physical exertion” and different skills which includes that the team or an individual has to compete against other individual for the purpose of entertainment and to stay active.

1.2.5 Sport participation

The Sports participation is the process of engagement of an individual in the sports as the means for increase the attainment and educational engagement.

1.2.6 Quality of living

The Quality of living is the overall well-being of an individual and the community which outline the positive and negative characteristics of life. This also observe satisfaction of life which include many different things from family, physical health, employment, education, safety, wealth, freedom, security environment and religious belief.

1.3 Incidence and prevalence/ statistics

The study by Böhmert, et al. (2018) conducted the study to find out the impact of “Sports participation” for Haemophilia children. This study assesses the quality related to the health and different variables regarding the "Health-related quality of life" (HRQOL) and the congenital and

Haemophilia bleeding disorder in Netherland. The findings of the study shows that in the population of 145 patient out of which 32 patients had severe haemophilia and they were at the age of 1 to 12 years does not show substantial impairment in the HRQOL. In conclusion, the result of the study is that the sports participation of patients with haemophilia is essential for their health and social care development (Buckley et al., 2018).

1.4 Relevant policies and guidance

The haemophilia patient who had to take the intermediate dose of the medication prevention might also experience more decline related to age in sports participation physical functioning and joint status that those who have to take high dose of medication prevention. The study by Buckley et al. (2018) shows that “Sports participation” and other physical activities of Haemophilia patient in children and adult. The study shows that Children with haemophilia needs to be properly educated and made self-aware of their condition while taking part in sports and other physical activities that they must tire their self and try not to harm because the wound of the Haemophilia took longer than usual in the process of healing. Moreover, it must be the duty of the medical practitioners and medical staff that they must provide the policies and guidance before when they started to take part in the sports and physical activities (Rocino, Franchini and Coppola, 2017).

1.5 Summary of existing literature

The study by Danielson et al. (2017) indicates that sports should be encouraged for the children suffering from a bleeding disorder like Haemophilia. There are many substantial bodies of the literature to discuss sports and other physical activities. On the other hand, the study by Foppen, et al. (2016) states that patients with a bleeding disorder like haemophilia, which also include Haemophilia are in the various ways for performing the sports and physical activities. The study also shows that the individual with Haemophilia There is a risk of bleeding when it comes to sports participation. It is also found that the higher the risk of bleeding, the lower the chance or inclination for sports participation. The study by

Givol et al. (2015) states that there are various health benefits from sports participation and/ or physical activities. While the study by O'Hara et al (2017), stated that the risk of bleeding and the other complication in the patients of Haemophilia related to the injuries occur in the different low and high impact of the activities. The high impact of the sports and physical activities include the basketball, baseball, football, gymnastics, hockey, track and running (Rocino, Franchini and Coppola, 2017).

1.6 Rationale

The proposed research study will be providing help to the haemophilia patient how they can effectively take part in sports and in physical activities to improve the health condition. The following topics, highlights the importance of regular physical activities and sports by explaining how these activities can help better manage living with haemophilia (Wilkins et al., 2018).

In addition to this, the study will also provide the significance of following the guideline and policies when the Haemophilia patient and their carers decided that they should take part in sports and healthy and physical activities (Wilkins et al., 2018).

1.7 Development of the research question

The proposed research study will be focusing on the following research question to provide the details of the study.

- To examine the impact of sports participation in the Haemophilia Patients.
- To identify the way how sports participation can lead to effective health condition to the Haemophilia patients
- To recommend the guideline and the policies to haemophilia patients while taking part in sports and other physical activities.

1.8 Aims and objectives

The proposed research study aims to find out the impact of the sports participation of patients with haemophilia. The study will further identify how sports participation/ physical activities of haemophilia patients can lead to an improvement in their quality of living (QOL). The study will also try to provide knowledge in regards to how they can adopt active physical activities/ sports and minimise the risk of bleeding (Waters et al., 2017).

Summary

This section of the study has discussed the current literature review and guidelines on the

Chapter 2 - Methodology

2.1 Methods

This chapter will map the different methods and technique used for identifying the relevant research study to include in the literature review of the study. Furthermore, this study will be discussing the chosen evaluation tools for the study and the analysis of the method. The study will further identify and examine the research studies approaches and the different strategies that will be adapted for conducting the research studies. Moreover, the methods also included the use of exclusive and inclusive criteria to narrow the search. It also included any ethical considerations, which is as follows (Schroeder et al., 2018).

2.1 Search strategy

The search strategy of the study is the reflection of the relevancy and the effectiveness of the process of the study. This was then adopted for the collection of the data and to analyse the data from the different sources which holds academic relevance. This also provides effective information on how the collection of the data was to be done and how the search strategy for the literature review of the

study is based on the development of the primary terms with new strategy of search for Increasing the searches resources of the study (Schäfer et al., 2016).

2.1.1 Databases

By using the CINAHL, British Medical Journal and Medline. All the databases were searched separately, and the following database was selected because they held academic or subject relevance (Oladapo et al., 2015).

2.1.2 Search terms (P.E.O.)

The critical term for the proposed research strategy to form this topic in question was to identify and examine studies/ papers using the P.E.O search strategy. The framework is based on the intervention, population, analysis, comparison and the finding of the research study (Oladapo et al., 2015). The strategy consisted of identifying all of the key terms relating to the chosen topic and identified in the research study. The strategy further included the different crucial alternative term with the alternate truncations and spelling for the alternative of finding and ending (Oladapo et al., 2015).

Also, with the help of the P.E.O search strategy, the searching for the literature of the study used in the proposed study to make sure that all of the key terms were used to search for the individual term in the searching of the study. “Sports Participation of the haemophilia patients” was searched for the literature review as the individual term in comparison to the three different words. The primary terms of the study were used for enhancing the search of the study that are identified by the keywords. Furthermore, to enhance the search alongside the different keywords, synonyms were used to improve the search for relevant literature. Also, different related terminologies were also used with the keywords to enhance and narrow down the search. Keywords that were used in the proposed research study are “Children, Haemophilia Patient, Physical health, Sports and Sporting Activities”. The Boolean

Operators were also used in the research study while the search process further narrows down the searching for relating studies and to refine the search by using particular key terms “Children”, “Haemophilia”, “Physical Health”, “sports” and “Physical Activities”. This has also been observed that the usage of the Boolean operator in the study reduce the time of searching (Oladapo et al., 2015). The Boolean operator also enhances the relevancy and the effectiveness of the search process. Therefore, the Boolean operator has been used in the proposed research study. The use of the Boolean Operator with the use of the different keywords improves the effectiveness and the efficiency of the search. Thus, the operator has been used in conjunction with others to enhance the search strategies used. The P.E.O. framework is shown in figure 1, through the form of a table. Figure 1 illustrates the use of primary terms for the search for relating studies which enhanced the effectiveness of the search

Population	Exposure	Outcome
Sports	Improve the health condition	Experience
Haemophilia	Bleeding disorder	Condition
Children	Victim of Bleeding disorder	
Physical activities	Healthier Impact	Understanding
Carer		Perception

(Oladapo et al., 2015).



Keywords	Synonyms	Related terms	Broader headings
Children	Adolescent	Patients	
Haemophilia	Bleeding Disease	Haemophilia Patients	Impact of Disease
Physical Health	Mental Health	Health condition	Medical health
Sports	Sporting, Sports Activities.	Healthy activities	Impact of sports

Physical activities.	Exercise	Workout.	Health Condition
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Figure 1

2.1.3 Other approaches

After deciding upon the key topic of the research study, the citation of database searching was performed in the proposed research study to improve the search (Oladapo et al., 2015). The proposed research study has followed method for identification of different research studies which are related to topic of proposed research study and the significance to add in literature review of study. The process of the citation search has also been carried out with the help of the references index which involved the reviews of the books, published journals and articles; which can also be used in the research study.

Lastly, with the help searching of citation, 15 research studies were resulted as relevant to incorporate in the literature review of the study (Rocino, Franchini and Coppola, 2017).

2.2 Inclusion and exclusion criteria

The Inclusion and exclusion criteria were employed for the identification of the studies that were relevant to the research topic and narrow down the search for relevant literatures.

The use of those criteria also fulfils the aims and objective of the research study along with identifying which research study should be added and removed from the proposed study. The inclusion criteria of the study, explains the all of the research studies that are published in the English language, as this is the primary language used in this paper. The inclusion criteria also ensured the reliability of the papers by limiting the publishing dates of the papers being searched. Another inclusion criterion, included the search for papers classed as journals/ articles, research studies, books and such, this was to ensure the academic relevance of the papers.

As for the exclusion criteria, the language of the papers was limited to those available or were already in English. The excluded criteria's also excluded papers published prior to 2015 for better reliability that the information it holds are based on current issues from the last 5 years. Moreover, the information posted on blogs, social media and the websites other than the academic relevance were also excluded from the proposed research study. These were excluded as they do not hold academic relevance and lac the information/ sources would be lacking in reliability/ validity (Waters et al., 2017).

Inclusion	Exclusion	Rationale
Published between 2015 to 2019	Published before 2015	Articles that are selected were all published within
English language	Non-English Journal	The translation was beyond the scope of the following systematic review.
Qualitative research	Quantitative research	Qualitative research is based on non-quantifiable factors such as feelings and emotions.
The research focused on "Sports participation"	Researches, which are not including female genital mutilation.	To ensure that the articles in the literature are regarding the research topic.

Figure 2

2.3 Critical appraisal and selected tool with rationale

The critical appraisal of the research study refers to the evaluation of the strengths and

limitations of literatures along with the assessing the reliability and value of the research study. Critical appraisal is an essential part of the research study as this prevent the falsification of the study. Furthermore, to ensure the critical appraisal of the research study used, the CASP tool will also be used in the study which formulated the checklist which reviews the section of the research study by categorising it accordingly (Waters et al., 2017).

2.4 Approach to analysis

The following research study used the systematic review for analysing the data with the help of the systematic review, which is employed by the researcher of the proposed study. Thus, the systematic review was carried out based on the technique of analysis that combines the different related studies (Waters et al., 2017).

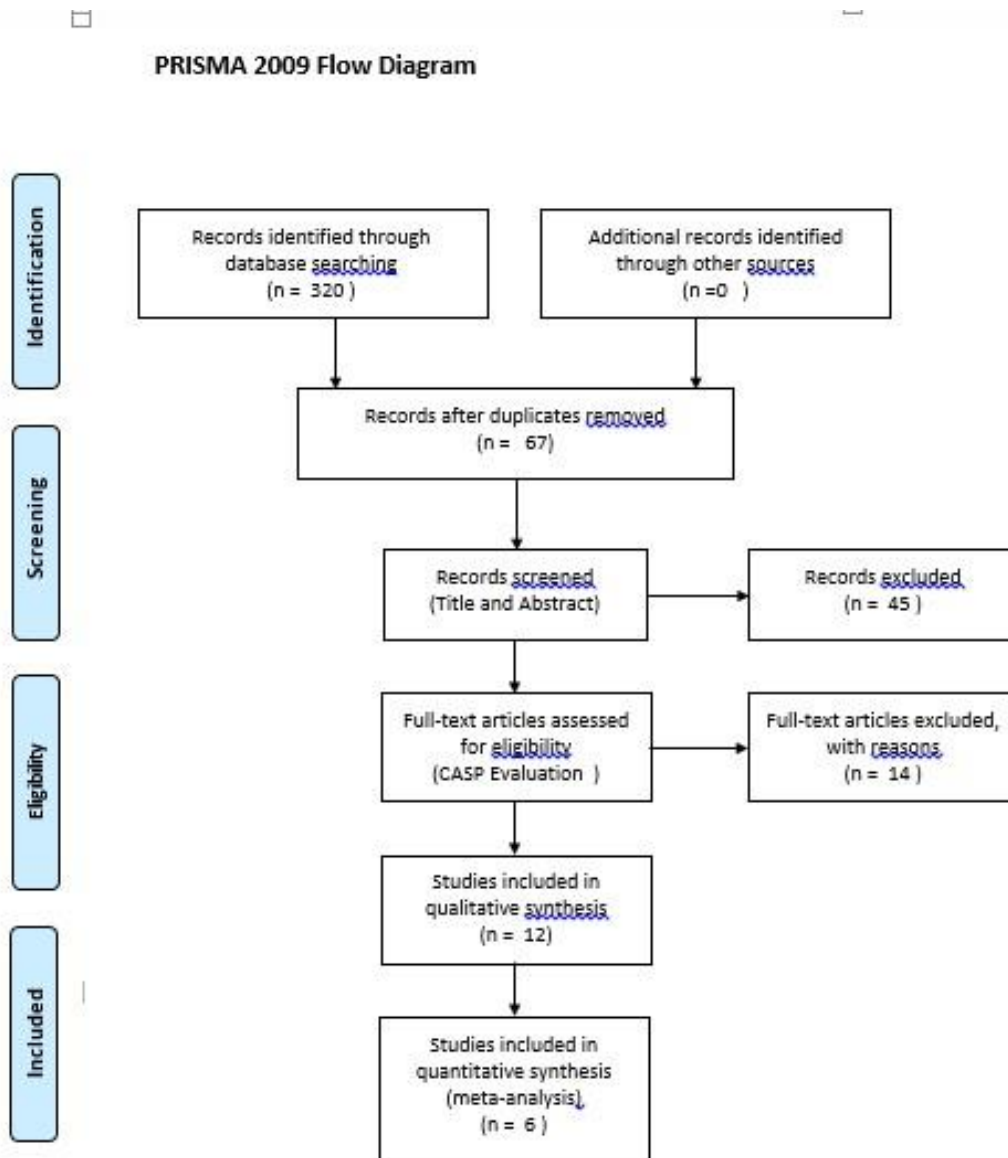


Chapter 3: Findings

This chapter of the dissertation will discuss the literature papers identified through Chapter 2: Methodology and the recurring theme from the thematic analysis of those papers.

3.1 Papers Identified

Figure 1: PRISMA Flow Chart



As mentioned in Chapter 2 and shown in Figure 1 (above), the search strategy identified a total of 320 papers. The overall papers were then screened and analysed, where the title and abstract/summary were used to review the relevance of the papers to the main topic of focus in this dissertation. A total of 6 papers were screened and found relevant to the topic at hand.



3.2 Study Characteristics

<p>STUDY</p> <p>CASP</p> <p>QUESTIONS</p>	<p>Maffet and Roton 2017. Haemophilia in sports: a case report and prophylactic protocol.</p> <p><i>Journal of athletic training</i></p>	<p>McGee, Raffini and Witmer, 2015. Organized sports participation and the association with injury in paediatric patients with haemophilia. <i>Haemophilia</i></p>	<p>Lassandro, et al. 2018. Sport and Hemophilia in Italy: An Obstacle Course</p>	<p>Runkel, Czepa and Hilberg, 2016. RCT of a 6-month programmed sports therapy (PST) in patients with haemophilia–Improvement of physical fitness</p>
<p>What were the methods used to conduct the studies?</p>	<p>necessary for qualitative in order to look at emotions and experiences (Maffet and Roton 2017)</p>		<p>Qualitative method was used to conduct the study (Lassandro, et al. 2018).</p>	<p>Qualitative method was used to conduct the study</p>
<p>What method of research did the studies used?</p>	<p>Structure and open ended questions were used in the study (Maffet and Roton 2017)</p>	<p>Unstructured style of interview was used in the study (McGee, Raffini and Witmer, 2015).</p>	<p>Structured and detailed interviews were conducted in the study (Lassandro, et al. 2018). semi-structured interviews with key questions</p>	<p>semi-structured interviews conducted twice, however discussion as to why interviews chosen not mentioned</p>

			and follow up interviews allowed the interviewer to direct conversation	
What were the different study characteristic between all the studies?	Different characteristic of the study is that open ended questions able to guide direction of interview and also Purposive sampling used. (Maffet and Roton 2017)	Different Characteristic of the study is that the study was	Different characteristic of the study is that thematic analysis using online software. First transcripts put in (Lassandro, et al. 2018).	Different characteristics of the study is that Purposive sampling, inclusion criteria used to ensure only those eligible were included.

<p>Were ethical considerations made by the studies? If so, how</p>	<p>YES: written informed consent gained. Interviews conducted by appropriate doctors and haemophilia specialists</p>	<p>YES: approval from the associated ethical committee received, written informed consent gained, appropriate time period waited</p>	<p>YES: Ethics committee approval given, anonymity maintained in transcripts, debriefing sheets given containing</p>	<p>YES: Ethics committee approval given, anonymity maintained in transcripts, debriefing</p>
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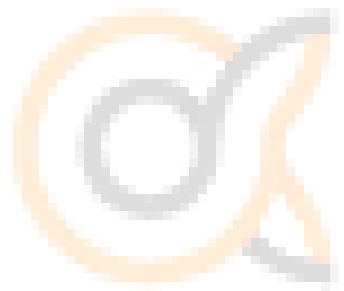
<p>were they made? How was consent gained? Were all of the studies approved by an ethical boar committee?</p>	<p>maintained in transcripts (Maffet and Roton 2017)</p>	<p>before recruitment due to sensitive issue, ongoing consent gained during interviews (McGee, Raffini and Witmer, 2015).</p>	<p>information on available haemophilia patients (Lassandro, et al. 2018).</p>	
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<p>Was there a clear statement of the aims of the research?</p>	<p>YES: 2 main objectives clearly stated.</p> <p>to assess views of using bedside resus trolley</p> <p>to determine impact of sports participation on haemophilia patients (Maffet and Roton 2017)</p>	<p>impact of sports participation on haemophilia patients (McGee, Raffini and Witmer, 2015).</p>	<p>YES: clearly stated in abstract, and again in introduction. No research has looked at the impact of sports participation on haemophilia patients.</p>	<p>YES: Clearly stated in the aim and again at the end of the introduction section. First study to look at the experiences impact of sports participation on haemophilia patients.</p>
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<p>Is qualitative methodology appropriate?</p>	<p>YES: appropriate as aim to understand views and experiences (Maffet and Roton 2017)</p>	<p>YES: looking at experiences and opinions in order to answer research question (McGee, Raffini and Witmer, 2015).</p>	<p>YES: necessary for qualitative in order to look at emotions and experiences</p>	<p>YES: as it looks at experiences and sports participation</p>
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<p>Was the research design appropriate to address the aims of the research?</p>	<p>YES: open ended questions able to guide direction of interview, allowed ppts freedom to explore own emotions (Maffet and Roton 2017)</p>	<p>hermeneutic phenomenological Approach (McGee, Raffini and Witmer, 2015).</p>	<p>YES: use of semi-structured interviews with follow up questions. Explained this more flexible therefore allows ppt to explore own emotions (Lassandro, et al. 2018).</p>	<p>YES: semi-structured interviews conducted twice, however discussion as to why interviews chosen not mentioned</p>
<p>Was the</p>	<p>YES: Purposive sampling used.</p>	<p>YES: Purposive sampling used and good</p>	<p>YES: Purposive sampling, haemophilia patients</p>	<p>YES: Purposive</p>

<p>recruitment strategy appropriate to the aims of the research?</p>	<p>Ensured only ppts meeting criteria were involved (Maffet and Roton 2017)</p>	<p>explanation as to why. Care taken when recruiting due to sensitive matter, approached differently (McGee, Raffini and Witmer, 2015).</p>	<p>present during resuscitation of child. Diverse sample representative of local surroundings (Lassandro, et al. 2018).</p>	<p>sampling, inclusion criteria used to ensure only those eligible were included. haemophilia patients opinions were sought to see if appropriate haemophilia patients approached.</p>
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3.3 Article Summary Table

Table 3 illustrates the summary of the six papers identified and included in the review.

Authors and Study Title	Date and Country	Objectives	Method	Sample	Findings	Strengths and Limitations
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<p>Broderick, C., Herbert, R., Latimer, J. and Curtin, J. (2010). Fitness and quality of life in children with haemophilia. Haemophilia, 16(1), pp.118-123.</p>	<p>Australia, 2010.</p>	<p>The aim of study was determine whether th differences aerobic are capacity, in muscle stren BMI and in</p>	<p>physiologist specialized in fitness</p>	<p>Forty-four boys with Haemophilia A and B and von Willebrand disorder participated in this study. Participants were recruited from the Haemophilia</p>	<p>There was no significant difference in BMI or aerobic fitness between the haemophilia group and the NSW schools' group at any age. Quality</p>	<p>Fitness, strength and quality of life was measured for the study participants.</p>
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		<p>Australian boys with haemophilia when compared with their healthy peers. In addition, the study measured quality of life in an Australian population of children with bleeding disorders and</p>		<p>Clinic at The Children's Hospital at Westmead in Sydney.</p>	<p>of life was generally high. There was no significant difference in overall quality of life in boys with haemophilia in Australia</p>	
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		compared it with data obtained from children with haemophilia in Europe.				
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<p>Cuesta-Barriuso, R., Torres-Ortuño, A., PérezAlenda, S., José Carrasco, J., Querol, F. and NietoMunuera, J. (2016). Sporting Activities and Quality of Life in Children With Hemophilia. Pediatric Physical Therapy, 28(4), pp.453-</p>	<p>United States, 2016</p>	<p>The objective of this study was to assess the incidence of sports activities in the quality of life as perceived by children with hemophilia.</p>	<p>The joint condition of patients with hemophilia was measured with the</p>	<p>53 children with hemophilia aged 7 to 13 years and 51 children without hemophilia were evaluated.</p>	<p>Perceiving a satisfactory QoL and having a good overall joint condition. Sports activity in children with hemophilia is associated with a better QoL and</p>	<p>It is essential to inform and educate parents from the moment the disease is diagnosed. In addition to prophylactic treatment,</p>
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459.			Spanish version of the Haemophilia Joint Health Score.		improved joint health.	exercise can help to maintain joint health and prevent hemophilic arthropathy.
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<p>Khair, K., Littley, A., Will, A. and von Mackensen, S. (2012). The impact of sport on children with haemophilia. Haemophilia, 18(6), pp.898-905.</p>	<p>NHS Trust, London, UK</p>	<p>The study aims to explore the impact of sport on health-related quality of life (HRQoL) and physical</p>	<p>statistical analyses were conducted using the SPSS program version</p>	<p>400 children (aged 6–17) and adults with haemophilia (aged 18–65), and parents of children. The children</p>	<p>Of the 84 participating boys only eight reported not doing any sport. The haemophiliaspecific HRQoL in children was</p>	<p>Boys participating in sport had a significant better physical performance and HRQoL</p>
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		performance in children with haemophilia.	17. The questionnaires were designed specifically for the study using validated	were divided into three age groups: [4–7 years (group I), 8–12 years (group II), 13–16 years (group III)]	generally good. Boys who did not do sport were more impaired in the dimension ‘feeling’ (P < 0.014) and ‘family’ (P < 0.13) than those doing Sportchildren reported a quite good overall HRQoL in the total score,	than boys not doing sport. Better HRQoL is demonstrated in those doing sport more than three times per week than those doing twice a week or less.
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					being highest in the youngest age group	
Limperg, P., Joosten, M., Fijnvandraat, K., Peters, M., Grootenhuis, M. and Haverman, L. (2018). Male gender, school attendance and sports participation are positively associated with healthrelated quality of life in children and adolescents with congenital bleeding disorders. Haemophilia,	Netherland, 2018	Study assesses health-related quality of life (HRQOL), and variables associated with HRQOL, in children and adolescents with haemophilia and congenital	Differences and using Mann Whitney U-tests. Multivariate regression analyses	Patients <18 years with CBD under treatment at the Hemophilia Comprehensive Care Center of the Academic Medical Center were included.	Adolescent boys (13-18 years) with CBD report a slightly higher HRQOL on the total and emotional functioning scales than healthy peers. Male gender, participation in	Continuing monitoring HRQOL in daily clinical practice for children with CBD is important and was found in the following study.

24(3), pp.395-404.		bleeding disorders (CBD) in the Netherlands.	were performed to assess variables associated with HRQOL.		sports and school attendance are positively associated with HRQOL. Parental country of birth, type of treatment and number of bleeds are not associated with HRQOL.	
Moeijes, J., van Busschbach, J., Wieringa, T., Kone, J., Bosscher, R. and Twisk, J. (2019). Sports participation and	Netherland, 2019	The study explores this association for specific characteristics	The respondents completed the Movement and Sports Monitor Questionnaire	Cross-sectional data were collected from Dutch primary school children	Membership of a sports club, moderate or high frequency of sports	The study provides information regarding association

<p>health-related quality of life in children: results of a cross-sectional study. Health and Quality of Life Outcomes, 17(1).</p>		<p>of sports participation, namely membership of a sports club, frequency of sports participation, performing individual versus team sports, performing indoor versus outdoor sports, while differentiating</p>	<p>Youth aged 8 to 12 years (MSMQ) and the KIDSCREEN-52, an HRQoL</p>	<p>aged 10 to 12 years.</p>	<p>participation, and performing outdoor sports were all significantly associated with better HRQoL. These associations were largely found in the physical domain of HRQoL, to a lesser degree in the social domain, and to a limited extent in</p>	<p>between sports participation and HRQoL in children depends on both characteristics of sports participation and the domain of life</p>
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		between specific dimensions in the physical, psychological and social domain of HRQoL.			the psychological domain.	
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Yıldız, M., Özdemir, N., Önal, H., Koç, B., Eliuz Tipici, B. and Zülfikar, B. (2019). Evaluation of Unfavorable Cardiovascular and Metabolic Risk Factors in Children and Young Adults with Haemophilia.	Istanbul, Turkey	The purpose of this study was to assess obesity, hypertension (HT), metabolic variables,	glucose and insulin levels, serum lipids and diet were evaluated.	Forty-eight haemophilia A and B patients and 35 age and sex matched healthy controls were included in the study.	The mean age of PwH was 21±9 years (range, 6-40 years). Of those ≥18 years, 46% were obese/overweight while there	Most of the subgroup analyses could not be performed and the relationship between
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<p>Journal of Clinical Research in Pediatric Endocrinology, 11(2), pp.173-180.</p>		<p>insulin resistance and metabolic syndrome in young PwH.</p>			<p>were no obese/overweight cases in the <18 year-old patients. Obesity was more prevalent in PwH with arthropathy. Fasting blood glucose levels of PwH were significantly higher compared to controls</p>	<p>cardiometabolic risk factors and severity of disease could not be analyzed. Furthermore, our data were collected from past medical records and at only one outpatient clinic visit rather than over time.</p>
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3.4 Identified Themes

The thematic analysis has identified the four themes related to the understanding of the impact of sports participation in the health of children with haemophilia. These following themes were identified includes sports participation and health; haemophilia and sports participation and the health of children and physical activities.

3.4.1 Theme 1: Haemophilia and sports participation

The study by () stated that, it was recognised from the findings of study that around eighty per cent of boys are treated at centres of haemophilia where the activity of sports is encouraged. While, physiotherapy are the part of regular care of haemophilia patients. Many of the studies have been assessed that the physical activity level among the patient with the Hemophilia compared with the general population. Many of the studies varied in term of the described population such as the patients with severe haemophilia of severity condition in comparison to the particular severity and the patient with the haemophilia of different age groups in comparison to the questionnaire of retrospective and the usage of the different measures of the physical activities over the time. Furthermore, irrespective of the fact that difference in the methodology, many of the different studies have analyzed that patients with haemophilia have an increased or similar physical activity level in relation to the normal population. Thus, in the examination of the studies, it was found that 61 of the studies related to the patient with haemophilia, the level of involvement in physical activities were found to be relatively decreased in comparison to the general public. The reduced level of physical activities might be due to the inclusion of the functional limitation in the patients.

The study Runkel, Von Mackensen and Hilberg, (2017), suggested that haemophilia might have a greater negative impact on the physical and mental health of the patient by also on the economic, physiological and the social well-being of the children with haemophilia and their families. The overall documentation of the negative effect on the life quality is important is portraying the attention towards the implementation of adequate intervention.

According to Schroeder et al. (2018), the children should be involved in the physical activities and sports before the age of the five or six years, as because before this age the children might not have the abilities of coordination, motor skills and the abilities of synchronization to actively participate in the sports activities. On the other hand, the study has also suggested that the children have the potential to be familiar with the activities of sports and become comfortable in physical activities and water.

They have the ability to learning regarding the body control to learn about how to contact with another individual. He further stated that when the children start participating at the stage of six or seven years, the physical capabilities of children might also allow for the active and real “Sports participation”. The capability of learning might improve among eight and thirteen years. Dexterity, flexibility and the balance sense might continue for progress.

3.4.2 Theme 2: Health of children and physical activities.

The children suffering from haemophilia do not have enough factor of clotting in their blood. Clotting factors are vital to stop bleeding of wounds, cuts and other injuries that can cause bleeding. The blood of the human body clot for prevention of excessive bleeding otherwise known as haemorrhaging (Runkel, Czepa and Hilberg 2016). There many different factors of clotting involved in the formation of clots for the stoppage of bleeding (Merlen et al., 2018). The two different factors which might affect the clotting of blood are the factor IX and factor VIII. The severity of haemophilia

in individuals are depended on the factor of blood clotting level in their body (Merlen et al., 2018). The severe cases of haemophilia are when the factor IX or VII is less than the amount of 1 per cent in their body. The process of bleeding might also happen for no known injury (Merlen et al., 2018). The bleeding in the patient of haemophilia most occurs in the head and joints area.

The study by Pinto et al. (2018), determine that outcome relative effect level of the participation of the children in sports among the school going children who are suffering from haemophilia to investigate the factor od prognostic for the outcomes of joint. The school children suffering from haemophilia A or B at the individual centre were examined in the study by Pinto et al. (2018). The clinical data were gathered on the status of baseline, treatment of haemophilia, BMI (Body Mass index), episodes of bleeding, assessments of joint, participation of athletes and different injuries were reviewed retrospectively. The data on the athlete participation was also supplemented when the incomplete record in the medical through telephonic interview. Thirty-seven of the children with severe haemophilia A or B received the fact of prophylaxis. The result of the study shows that the around 73 per cent of the participant was involved in the high effected activities while on the other hand the 27 per cent of the participants were involved in the lower impacted activities. The overall frequency of the haemorrhages in joints and the other injuries does not become distinct among the athlete. The findings of the study show that the participation of athletes with the adequate precaution and the supervision should be encouraged in the children suffering from haemophilia receive the prophylaxis, provided the significant benefits of health.

The study by Runkel, Czepa and Hilberg (2016), “Sports participation” and physical exercise is one of the primary foundations in the treatment of the children suffering from haemophilia. The research study provides the brief description and the analysis of the haemophilia characteristics, and with the extensive literature review. The overall importance of the sports participation and the physical condition in regards to the treatment and the prevention of the “musculoskeletal lesions” in the patients

of haemophilia has also been examining and analysing. The findings of the study show that the physical condition of haemophilia patients can be effectively controlled with the help of replacement therapy for the clotting factors.

3.4.2 Theme 3: Sports Therapy

It was determined that majority of the studies that were evaluated during this work described population such as patients suffering from haemophilia of severe nature in comparison to the particular severity. The patient with the haemophilia of different age groups in comparison to the questionnaire of retrospective and the usage of the different measures of the physical activities over the time. During the evaluation of the studies, it was found that 61 of the studies related to the patient with haemophilia. The level of involvement in physical activities were found to be relatively low as compared to the general public. The reduced level of physical activities might be due to the inclusion of the functional limitation in the patients.

The study Runkel, Von Mackensen and Hilberg, (2017), suggests that Haemophilia have some negative impact on the physical and mental health of individuals with this condition. The study further states that physiological and the social well-being of the children with haemophilia and their families. The overall documentation of the negative effect on the quality of life in children with haemophilia is important in portraying the attention towards the implementation of adequate intervention.

According to Schroeder et al. (2018), children should be involved in physical activities and sports before the age of five or six years. This was recommended as children younger than 5 or 6 have less coordination, motor skills and other abilities for active sports participation.

On the other hand, the study has also suggested that the children have the potential to be familiar with sports activities and become comfortable in physical activities in water. Children have the ability to learning regarding the body control to learn about how to contact with another individual. The

capability of learning improve between eight to thirteen years. Dexterity, flexibility and the balance sense might continue for progress.



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3.5 Summary

Chapter 3 of this study discussed the recurring theme from the six identified papers. It also provided a critique of the literatures. These papers were also compared and contrasted with one another.

In the following chapter, the findings from the identified themes from the selected papers will be discussed. Furthermore, it will also include recommendations for further research, improvements in practice and education. It will also highlight the importance of further

Chapter 4.0. Discussion

This section of the study will be discussing the literature with the help of the literature review done in chapter one. Furthermore, with the help of the discussed theme in the section of thematic analysis.

4.1 Discussion related to themes and in light of existing literature

From the discussion of the literature found from the study of Buckley et al. (2018), it is important for patients with Haemophilia to be involved in sports and physical activities. This is further stated as a benefit to help improve their health condition and to stay active. The discussion of the study also demonstrates that it is also the duty of the health care practitioner and the nurses that they should develop policies and provide the guidance regarding every aspect that could cause harm to the individuals suffering from haemophilia as they were involved in physical sports and activities.

The study by Versloot et al. (2019), shows that the patient suffering from haemophilia is having risk of being involved in the injuries and

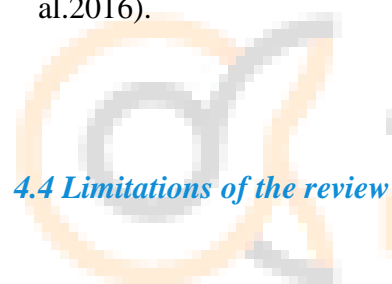
causing harm while participating in the physical and sports activities. The higher the risk of the sports/ activities, the less inclined patients with haemophilia are with participating (Versloot et al. 2019). The study of Wang et al. (2016)., further shows that the patient suffering from haemophilia also have the higher risk of bleeding; the other complication in the patients with Haemophilia related to the injuries occur in the different low and high impact of the activities. The sports and physical activities considered to have high impact or risk of bleeding includes basketball, baseball, football, gymnastics, hockey, track and running (Wang et al. 2016).

On the other hand, the themes of the thematic analysis also demonstrate that exercise and sports therapy are now becoming more integrated into the treatment plan of haemophilia. Although, there are various advantages associated to the sports therapy. However, there was no such concept of using sports therapy as a treatment at the initial stages. The discussion of the study also demonstrates that the type of sports activities into the high and low categories for haemophilia patients could be simplistic, which lead to excessive restriction. The study of Versloot et al. (2019), examines the participation in sports must be consider as one by one and should also take into consideration of the desired effects. That includes the playing and duration of each of the sports activity as well as the intensity of the physical activity. Furthermore, it includes training and the amount of stress on the joint of the patients, the age of the children and most of above the overall condition of the patients.

4.3 Recommendation for the education, nursing practices and the research

The patient suffering from haemophilia must not be involved in the physical and sports activities which puts stress on their joint and head as these are main areas which are most at risk of bleeding (Von et al.2016). Moreover, it is also important for the haemophilia patient that they should involve in the activities that include strength, flexibility, endurance, balance and coordination (Wang et al. 2016). The medical professionals

and the practitioners should also take into the consideration that the sports and physical activities in which haemophilia patients are partaking should be beneficial. It does not cause any harm and should also be interesting and have the element of the fun because it is important for the haemophilia patient they have interest in the activities in which they are involved. The discussion of the theme also stated that interests of the individuals with haemophilia plays a significant role in maintaining the physical activities and exercise. It would also be further perceived, as interesting and fun when their friends and family actively participates in the activity as well (Von et al.2016). The will also explain the importance of how the Haemophilia patients should take part in sports and other physical activities mindfully, to limit the risk of bleeding (Von Mackensen et al.2016).



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The limitation of the study is that it does not include many of the studies which are specifically related to children with haemophilia. Due to lack of resources the study includes the studies which were related to the haemophilia in general not specific to the haemophilia children. The reason behind this is the search engine we have used in the study shows the most of the studies related to the haemophilia patients and adults not specifically to the children. On the other hand, due to the lack of time and funding for conducting the research study, we had limited resources to conduct the study (Zetterberg, Ljungkvist and Salim, 2018).

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P	E	O
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Appendices

Children	1. Haemop hilia	S p o r t s
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2. Child	2. Hemoph ilia	Q u a l i t y o f l i

			vi n g
O R	O R	O R	O R
3. Hemophi lia	3. Bleeding Disorder	3. Sp o rt s P a r t i c i p a t i o n	
O R	O R	O R	O R

4.		4.		4. Qu
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Trainers		Long term impact		ality of Life
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5. Carer		5. Victim of Bleeding Disorder		5. Physical Activities
O		O		O
R		R		R

Appendices:

6. Doctors		6. Bleeding Disorder		6. Exercise	
T	N	T	N	T	O
otal = 125,071	D	otal = 4,306	D	otal = 1,062	verall Total = 350

Datab ase	Descri ption of database	Ration ale for using this database
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<p>Cinahl Complete</p>	<p>Provides full-text access to a large number of journals mostly in nursing specialties, but also covers general health & medicine, speech & language pathology, radiography, psychology and more.</p>	
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British Medical Journal	A collection of medical journals published by the BMJ Publishing Group including British Medical Journal. Some articles were dated as far as 1925.	

<p>PubMe</p> <p>d</p>	<p>Provides</p> <p>access to citations & abstracts only from selected</p>	<p>The</p> <p>author was more able and informed in using the</p>
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	<p>books and journals in the field of biomedical research, nursing, healthcare, public health, life sciences, medicine, and more. Link to many free full text from PubMed Central is available.</p>	<p>advanced search engine from this database. The Boolean operators and other search strategies were also easily accessible through advance searching.</p>
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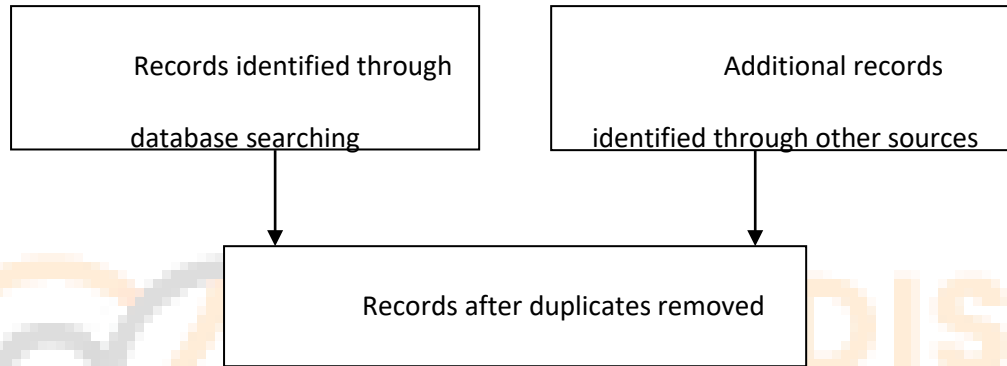
406	rebranded as Europe PubMed Central which has a greater emphasis on European resources. It offers abstracts and/or free full text articles in biomedicine including Patents and NHS guidelines.	Europe/ UK are highlighted and easier found. Relevant Journals/ articles were more accessible in full text format/ pdf
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Appendix 2 – Summary table of the databases used

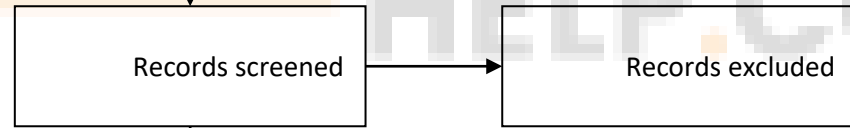


PRISMA 2009 Flow Diagram

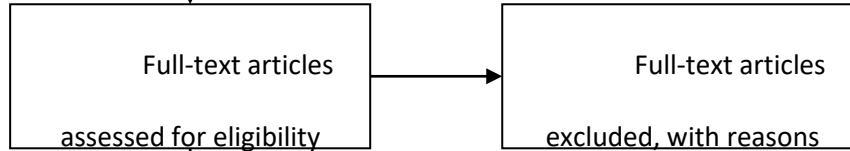
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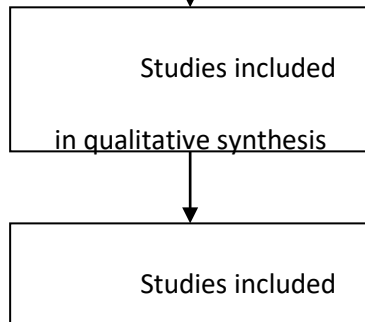
Screening



Eligibility



Included





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Critical Appraisal Skills Programme (CASP) Tool – Systematic Review Checklist

CASP Qualitative Checklist

<p>STUDY</p> <p>CASP</p> <p>QUESTIONS</p>	<p>Maffet and Roton</p> <p>2017. Haemophilia in sports: a case report and prophylactic protocol.</p> <p><i>Journal of athletic training</i></p>	<p>McGee, Raffini and Witmer, 2015. Organized</p>	<p>Lassandro, et al. 2018.</p> <p>Sport and Hemophilia in Italy: An Obstacle Course</p>	<p>Runkel, Czepa and Hilberg, 2016. RCT of a 6-month programmed sports therapy (PST) in patients with haemophilia–Improvement of physical fitness</p>
<p>What were the methods used to conduct the studies?</p>	<p>necessary for qualitative in order to look at emotions and experiences (Maffet and Roton 2017)</p>	<p>Qualitative method was used to conduct the study (McGee, Raffini and Witmer, 2015).</p>	<p>Qualitative method was used to conduct the study (Lassandro, et al. 2018).</p>	<p>Qualitative method was used to conduct the study</p>
<p>What method of research</p>	<p>Structure and open ended questions were used in</p>	<p>Unstructured style of interview was used in the study</p>	<p>Structured and detailed interviews were conducted in</p>	<p>semi-structured interviews conducted twice,</p>

<p>did the studies used?</p>	<p>the study (Maffet and Roton 2017)</p>	<p>(McGee, Raffini and Witmer, 2015).</p>	<p>the study (Lassandro, et al. 2018). semi-structured interviews with key questions and follow up interviews allowed the interviewer to direct conversation</p>	<p>however discussion as to why interviews chosen not mentioned</p>
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<p>What were the different study characteristic between all the studies?</p>	<p>Different characteristic of the study is that open ended questions able to guide direction of interview and also Purposive sampling used. (Maffet and Roton 2017)</p>	<p>as answer research question (McGee, Raffini and Witmer, 2015).</p>	<p>Different characteristic of the study is that thematic analysis using online software. First transcripts put in (Lassandro, et al. 2018).</p>	<p>Different characteristics of the study is that Purposive sampling, inclusion criteria used to ensure only those eligible were included.</p>
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<p>Were ethical considerations made by the studies? If so, how were they made? How was consent gained? Were all of the studies approved by an ethical board committee?</p>	<p>YES: written informed consent gained. Interviews conducted by appropriate doctors and haemophilia specialists maintained in transcripts (Maffet and Roton 2017)</p>	<p>YES: approval from the associated ethical committee received, written informed consent gained, it appropriate time period</p>	<p>YES: Ethics committee approval given, anonymity maintained in transcripts, debriefing sheets given containing information on available haemophilia patients (Lassandro, et al. 2018).</p>	<p>YES: Ethics committee approval given, anonymity maintained in transcripts, debriefing</p>
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<p>Was there a clear statement of the aims of the research?</p>	<p>YES: 2 main objectives clearly stated. to assess views of using</p>	<p>YES: clear statement of aim, undertaken due to sports participation , previous</p>	<p>YES: clearly stated in abstract, and again in introduction. No research has</p>	<p>YES: Clearly stated in the aim and again at the end of the introduction section. First</p>
<p>research?</p>	<p>bedside resus trolley to determine impact of sports participationon haemophilia patients (Maffet and Roton 2017)</p>	<p>studies concentrate on staff opinions. Previous studies impact of sports participationon haemophilia patients (McGee, Raffini and Witmer, 2015).</p>	<p>looked at the impact of sports participationon haemophilia patients.</p>	<p>study to look at the experiences impact of sports participationon haemophilia patients.</p>

Is qualitative methodology appropriate?	YES: appropriate as aim to understand views and experiences (Maffet and Roton, 2017)	at ini	YES: necessary for qualitative in order to look at emotions and experiences	YES: as it looks at experiences and sports participation
Was the research design appropriate to	YES: open ended questions able to guide direction of interview, allowed	CAN'T TELL: no mention about why qualitative was appropriate or why	YES: use of semi-structured interviews with follow up questions. Explained	YES: semi-structured interviews conducted twice, however discussion as

<p>address the aims of the research?</p>	<p>ppts freedom to explore own emotions (Maffet and Roton 2017)</p>	<p>interviews were used. Vague discussion about use of hermeneutic phenomological Approach (McGee, Raffini and Witmer, 2015).</p>	<p>this more flexible therefore allows ppt to explore own emotions (Lassandro, et al. 2018).</p>	<p>to why interviews chosen not mentioned</p>
<p>Was the recruitment strategy appropriate to the aims of the research?</p>	<p>YES: Purposive sampling used. Ensured only ppts meeting criteria were involved (Maffet and Roton 2017)</p>	<p>e, Raffini and Witmer, 2015).</p>	<p>YES: Purposive sampling, haemophilia patients present during resuscitation of child. Diverse sample representative of local surroundings (Lassandro, et al. 2018).</p>	<p>YES: Purposive sampling, inclusion criteria used to ensure only those eligible were included. haemophilia patients opinions were sought to see if appropriate haemophilia patients approached.</p>

<p>STUDY</p> <p>CASP</p> <p>QUESTIONS</p>	<p>Maffet and Roton 2017. Haemophilia in sports: a case report and prophylactic protocol. <i>Journal of athletic training</i></p>	<p>McGee, Raffini and Witmer, 2015. Organized sports participation and the association with injury in paediatric patients with haemophilia. <i>Haemophilia</i></p>	<p>Lassandro, et al. 2018. Sport and Hemophilia in Italy: An Obstacle Course</p>	<p>Runkel, Czepa and Hilberg, 2016. RCT of a 6-month programmed sports therapy (PST) in patients with haemophilia–Improvement of physical fitness</p>
<p>What were the methods used to conduct the studies?</p>	<p>(Maffet and Roton 2017)</p>		<p>(Lassandro, et al. 2018).</p>	

<p>What method of research did the studies used?</p>	<p>Structure and open ended questions were used in the study (Maffet and Roton 2017)</p>	<p>Unstructured style of interview was used in the study (McGee, Raffini and Witmer, 2015).</p>	<p>Structured and detailed interviews were conducted in the study (Lassandro, et al. 2018). semi-structured interviews with key questions and follow up interviews allowed the interviewer to direct conversation</p>	
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<p>What were the different study characteristics between all the studies?</p>	<p>Different characteristics of the study is that open ended questions able to guide direction of interview and also Purposive sampling used. (Maffet and Roton 2017)</p>	<p>Different Characteristics of the study is that the study was focusing at experiences and opinions in order to answer research question (McGee, Raffini and Witmer, 2015).</p>	<p>Different characteristics of the study is that thematic analysis using online software. First transcripts put in (Lassandro, et al. 2018).</p>	
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<p>Were ethical considerations made by the studies? If so, how were they made? How was consent gained? Were all of the studies approved by an ethical board committee?</p>	<p>YES: written informed consent gained.</p> <p>Interviews conducted by appropriate doctors and haemophilia specialists maintained in transcripts (Maffet and Roton 2017)</p>	<p>YES: approval from the associated ethical committee received, written informed consent gained</p>	<p>YES: Ethics committee approval given, anonymity maintained in transcripts, debriefing sheets given containing information on available haemophilia patients (Lassandro, et al. 2018).</p>	
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<p>Was there a clear statement of the aims of the research?</p>	<p>YES: 2 main objectives clearly stated. to assess views of using bedside resus trolley to determine impact of sports participation on haemophilia patients (Maffet and Roton 2017)</p>	<p>YES: clear statement of aim, undertaken due to sports participation , previous studies concentrate on staff</p>	<p>YES: clearly stated in abstract, and again in introduction. No research has looked at the impact of sports participation on haemophilia patients.</p>	<p>YES: Clearly stated in the aim and again at the end of the introduction section. First study to look at the experiences impact of sports participation on haemophilia patients.</p>
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<p>Is qualitative methodology appropriate?</p>	<p>YES: appropriate as aim to understand views and experiences (Maffet and Roton 2017)</p>	<p>YES: looking at experiences and opinions in order to answer research question (McGee, Raffini and Witmer, 2015).</p>	<p>YES: necessary for qualitative in order to look at emotions and experiences</p>	<p>YES: as it looks at experiences and sports participation</p>
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<p>Was the research design appropriate to address the aims of the research?</p>	<p>YES: open ended questions able to guide direction of interview, allowed ppts freedom to explore own emotions (Maffet and Roton 2017)</p>	<p>CAN'T TELL: no mention about why qualitative was appropriate or why interviews were used. Vague discussion about use of hermeneutic phenomenological Approach (McGee, Raffini and Witmer, 2015).</p>	<p>YES: use of semi-structured interviews with follow up questions. Explained this more flexible therefore allows ppt to explore own emotions (Lassandro, et al. 2018).</p>	<p>YES: semi-structured interviews conducted twice, however discussion as to why interviews chosen not mentioned</p>
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<p>Was the recruitment strategy appropriate to the aims of the research?</p>	<p>YES: Purposive sampling used. Ensured only ppts meeting criteria were involved (Maffet and Roton 2017)</p>	<p>YES: Purposive sampling used and good explanation as to why. Care taken when recruiting due to sensitive matter, approached differently (McGee, Raffini and Witmer, 2015).</p>	<p>YES: Purposive sampling, haemophilia patients present during resuscitation of child. Diverse sample representative of local surroundings (Lassandro, et al. 2018).</p>	<p>YES: Purposive sampling, inclusion criteria used to ensure only those eligible were included. haemophilia patients opinions were sought to see if appropriate haemophilia patients approached.</p>
		<p>depending on outcome of haemophilia patients</p>		<p>Some declined to participate as no comments on the</p>
				<p>event</p>

<p>Was the data collected in a way that addressed the research issue?</p>	<p>YES: clear explanation of how data collected. Methods were not modified throughout study. Data recorded and transcribed.</p> <p>Saturation of data</p>	<p>YES: discussion about the settings used; the</p>	<p>YES: semi-structured interviews with key questions and follow up interviews allowed the interviewer to direct conversation but gave fathers flexibility to explore own sports participation of haemophilia patients recorded and transcribed, data collected until saturation (Lassandro, et al.</p>	<p>YES: semi-structured interviews used, first one within 2-4 days post event, and again one month later as views may have changed over time. Recorded and transcribed. Visual observations were recorded of the parents pre, during and post interview. Demographic info recorded for sample</p>
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			2018).	information. Saturation of data mentioned
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<p>Has the relationship between researcher and participants been adequately considered?</p>	<p>YES: issues</p> <p>identified sports participation of haemophilia patients to give feedback as on longer term impact on their health.</p>	<p>NO: no discussion</p> <p>about any bias the researcher may have had. No alteration of study during data collection as researcher did</p>	<p>YES: sports</p> <p>participation of haemophilia patients like they had to give positive feedback as mum and hospital- reassured that comments would be anonymous (Lassandro, et al. 2018).</p>	<p>NO: no discussion</p> <p>about potential researcher bias, no alteration of the research design throughout.</p>
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<p>Have ethical issues been taken in to consideration?</p>	<p>YES: written informed consent</p> <p>gained</p> <p>d. Interviews conducted by appropriate doctors and haemophilia specialists maintained in transcripts</p>	<p>the associated ethical</p> <p>written informed consent</p> <p>period waited before recruitment due to sensitive issue, ongoing consent gained during interviews.</p>	<p>YES: approval from committee received,</p> <p>YES: Ethics committee approval given, anonymity maintained in transcripts, debriefing sheets given containing information on available haemophilia patients</p>	<p>Yes: informed consent gained from all the participants</p> <p>hospital Research Ethics Board gave approval.</p>
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<p>Was the data analysis</p>	<p>CAN'T TELL: description of analysis given, however</p>	<p>CAN'T TELL: brief discussion on using van Manen's framework-</p>	<p>YES: thematic analysis using online software. First transcripts put in</p>	<p>YES: both researchers involved in analysis and identific ation of</p>
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Article Summary Table

Table 3 illustrates the summary of the six papers identified and included in the review

<i>Authors and Study Title</i>	<i>Date and Country</i>	<i>Objectives</i>	<i>Method</i>	<i>Sample</i>	<i>Findings</i>	<i>Strengths and Limitations</i>
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<p>Broderick, C., Herbert, R., Latimer, J. and Curtin, J. (2010). Fitness and quality of life in children with haemophilia. <i>Haemophilia</i>, 16(1), pp.118-123.</p>	<p><i>Australia, 2010.</i></p>	<p><i>The aim of this study was to determine whether there are differences in aerobic capacity, muscle</i></p>	<p><i>gist specialized in fitn</i></p>	<p><i>Forty-four boys with Haemophilia A and B and von Willebrand disorder participated in this study. Participants</i></p>	<p><i>There was no significant difference in BMI or aerobic fitness between the haemophilia group and the NSW schools'</i></p>	<p><i>Fitness, strength and quality of life was measured for the study participants.</i></p>
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		<p><i>strength and BMI in Australian boys with haemophilia when compared with their healthy peers. In addition, the study measured quality of life in an Australian population of</i></p>		<p><i>were recruited from the Haemophilia Clinic at The Children's Hospital at Westmead in Sydney.</i></p>	<p><i>group at any age. Quality of life was generally high. There was no significant difference in overall quality of life in boys with haemophilia in Australia</i></p>	
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		<p><i>children</i></p> <p><i>with</i></p> <p><i>bleeding</i></p> <p><i>disorders</i></p> <p><i>and</i></p> <p><i>compared it</i></p> <p><i>with data</i></p> <p><i>obtained from</i></p> <p><i>children with</i></p> <p><i>haemophilia in</i></p> <p><i>Europe.</i></p>				
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Cuesta-Barriuso, R., Torres-Ortuño, A., Pérez-Alenda, S., José Carrasco, J., Querol, F. and Nieto-Munuera, J. (2016). Sporting Activities	United States, 2016	<i>The objective of this study was to assess the incidence of sports activities in the quality of</i>	<i>The perception of quality of life, clinical variables, and the frequency of sports activities were registered.</i>	<i>53 children with hemophilia aged 7 to 13 years and 51 children without hemophilia were</i>	<i>Perceiving a satisfactory QoL and having a good overall joint condition.</i> Sports	<i>It is essential to inform and educate parents from the moment the disease is</i>
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<p>and Quality of Life in Children With Hemophilia. Pediatric Physical Therapy, 28(4), pp.453-459.</p>		<p><i>life as perceived by children with hemophilia.</i></p>	<p><i>The joint condition of patients with hemophilia was measured with the Spanish version of</i></p>	<p><i>evaluated.</i></p>	<p>activity in children with hemophilia is associated with a better QoL and improved joint health.</p>	<p><i>diagnosed.</i></p> <p>In addition to prophylactic treatment, exercise can help to maintain joint health and prevent hemophilic arthropathy.</p>
<p>Khair, K., Littley, A., Will, A. and von Mackensen, S. (2012). The impact of sport on children</p>	<p><i>NHS Trust, London, UK</i></p>	<p><i>The study aims to explore the impact of sport on</i></p>	<p><i>The HRQoL was assessed using respective agegroup versions. All</i></p>	<p><i>400 children (aged 6–17) and adults with haemophilia</i></p>	<p><i>Of the 84 participating boys only eight reported not</i></p>	<p><i>Boys participating in sport had a significant</i></p>



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<p>with haemophilia. Haemophilia, 18(6), pp.898-905.</p>		<p><i>health-related quality of life (HRQoL) and physical performance in children with haemophilia.</i></p>	<p><i>statistical analyses were conducted using the SPSS program version 17. The lect data on HRQoL and physical</i></p>	<p><i>(aged 18–65), and parents of children. The children were divided into three age groups: [4–7 years (group I), 8–12 years (group II), 13–16 years (group III)]</i></p>	<p><i>doing any sport. The haemophiliaspecific HRQoL in children was generally good. Boys who did not do sport were more impaired in the dimension 'feeling' (P < 0.014) and 'family' (P < 0.13) than those doing</i></p>	<p><i>better physical performance and HRQoL than boys not doing sport. Better HRQoL is demonstrated in those doing sport more than three times per week than those doing twice a week or</i></p>
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			<i>performance.</i>		<i>Sportchildren reported a quite good overall HRQoL in the total score, being highest in the youngest age group</i>	<i>less.</i>
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Limperg, P., Joosten, M., Fijnvandraat, K., Peters, M., Grootenhuis, M. and Haverman, L. (2018). Male gender, school	<i>Netherland, 2018</i>	<i>Study assesses health-related quality of life (HRQOL), and variables associated with</i>	<i>Differences and effect sizes in HRQOL compared to healthy peers, and between</i>	<i>Patients <18 years with CBD under treatment at the Hemophilia Comprehensive</i>	<i>Adolescent boys (13-18 years) with CBD report a slightly higher HRQOL on the total and</i>	<i>Continuing monitoring HRQOL in daily clinical practice for children with</i>
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<p>attendance and sports participation are positively associated with healthrelated quality of life in children and adolescents with congenital bleeding disorders. Haemophilia, 24(3), pp.395-404.</p>		<p><i>HRQOL, in children and adolescents with haemophilia and congenital bleeding disorders (CBD) in the Netherlands.</i></p>	<p><i>hemophilia severity groups, were tested using Mann Whitney U-tests. Multivariate</i></p>	<p><i>Care Center of the Academic Medical Center were included.</i></p>	<p><i>emotional functioning scales than healthy peers. Male gender, participation in sports and school attendance are positively associated with HRQOL. Parental country of birth, type of treatment and number of bleeds</i></p>	<p><i>CBD is important and was found in the following study.</i></p>
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					<i>are not associated with HRQOL.</i>	
<p>Moeijes, J., van Busschbach, J., Wieringa, T., Kone, J., Bosscher, R. and Twisk, J. (2019). Sports participation and health-related quality of life in children: results of a cross-sectional study. <i>Health and Quality of Life Outcomes</i>, 17(1).</p>	<p><i>Netherland, 2019</i></p>	<p><i>The study explores this association for specific characteristics of sports participation, namely membership of a sports club, frequency of sports</i></p>	<p><i>The respondents KIDSCREEN-52, an HRQoL questionnaire for children and</i></p>	<p><i>Cross-sectional data were collected from Dutch primary school children aged 10 to 12 years.</i></p>	<p><i>Membership of a sports club, moderate or high frequency of sports participation, and performing outdoor sports were all significantly associated with better HRQoL.</i></p>	<p><i>The study provides information regarding association between sports participation and HRQoL in children depends on both characteristics of</i></p>

		<p><i>participation, performing individual versus team sports, performing indoor versus outdoor sports, while differentiating between specific dimensions in the physical, psychological</i></p>	<p><i>adolescents. The data were examined using linear multilevel analyses</i></p>		<p><i>These associations were largely found in the physical domain of HRQoL, to a lesser degree in the social domain, and to a limited extent in the psychological domain.</i></p>	<p><i>sports participation and the domain of life</i></p>
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		<i>and social domain of HRQoL.</i>				
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<p><i>Yıldız, M., Özdemir, N., Önal, H., Koç, B., Eliuz Tipici, B. and Zülfikar, B. (2019). Evaluation of Unfavorable Cardiovascular and Metabolic Risk Factors in Children and Young Adults with Haemophilia. Journal of Clinical Research in Pediatric Endocrinology, 11(2),</i></p>	<p><i>Istanbul, Turkey</i></p>	<p><i>The purpose of this study was to assess obesity, hypertension (HT), metabolic variables, insulin resistance and metabolic syndrome in</i></p>	<p><i>Anthropometric mea.</i></p>	<p><i>Forty-eight haemophilia A and B patients and 35 age and sex matched healthy controls were included in the study.</i></p>	<p><i>The mean age of PwH was 21±9 years (range, 6-40 years). Of those ≥18 years, 46% were obese/overweight while there were no obese/overweight cases in the <18 year-old patients.</i></p>	<p><i>Most of the subgroup analyses could not be performed and the relationship between cardiometabolic risk factors and severity of disease could</i></p>
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<i>pp.173-180.</i>		<i>young PwH.</i>			<p><i>Obesity was more prevalent in PwH with arthropathy. Fasting blood glucose levels of PwH were significantly higher compared to controls</i></p>	<p><i>not be analyzed. Furthermore, our data were collected from past medical records and at only one outpatient clinic visit rather than over time.</i></p>
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