RESEARCH ARTICLE

THE CAUSES OF SPORTS INJURY IN THE CASE OF GEDEO ZONE DILLA TOWN MALE HANDBALL PROJECT PLAYERS

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ABSTRACT

The main objective of this study was to predict Sport Injuries from selected Causes Sport Injury variables in the Case of Gedeo Zone Dilla Town Male Handball Project Players. Emphasis was put on trying to establish the causes' of sport injuries sub variables like lack of Improper motion, Improper rest, Overtraining, Lack of warming-up, Lack cooling-down, Lack of knowledge, Unbalanced diet, Protective equipment, Playing ground, Re-injury and Water intake (Before, During and After) to predict injuries in Male Handball Project Players at Gedeo Zone Dilla Town. To obtain data for this study, the investigator from two project totally forty Six (N=46, aged 14-20) Male Handball project Players, U/16 Players (n=24) & U/20 (n=22) from each projects to act as subjects needed. The non-probability sampling technique used to select the required subjects was purposive sampling technique. Having been informed about the objective and protocol of the study, all the subjects gave their consent and became volunteered to participate in this study. To analyze the data, Pearson product-moment correlation coefficient to related to injuries, Step-wise Multiple regression and Standard Multiple regressions (MR) statistical tools were used to the Causes of Sport Injury main variables like Poor medical checking, Poor coaching, Injury rates in training and competition, Lack of physical fitness, Lack of facilities and equipment's Lack of values of fluids intake and Lack of the values of nutrition to predict injuries in Male Handball project Players at Gedeo Zone Dilla Town. It is concluded that a significant relationship were found in Male Handball project Players in respect to the causes of sport injury variable and the researcher recommended that; Dilla Male Handball Players concerned bodies considering the causes of sport injuries during training and competition.

Introduction

Handball is a team sport in which two teams of seven players each (six field players and a goalkeeper) pass a ball to throw in to the goal of the other team. The team with the most goals after two periods of 30 minutes wins. It

has been an Olympic sport since 1972, and is one of the most popular sports in Europe after football, volleyball and basketball (Taborsky, F. 2011).

Early origin of team handball, although it has only been played internationally since the 19 century the origin of team handball go back a long way. In fact it is through to have developed from some of the oldest game the human race has ever enjoyed. The origin of the game is likely to date from ancient Greek and Roman times. Handball is one of the most popular team games in Europe, with in both male and female players. African Handball was founded in 1973 and represents the national handball associations of Africa under the supervision of IHF. Handball in our country Ethiopia introduced by Ato Tekuaume and other Physical Education teacher in Addis Ababa University in 1960. According to Mulgeta (2005) at that time the game was played by few universities. After one year in 1961 establish rules and regulation by police force army and other participant with given training made a base line to participate others with the regions communities.

Handball is a high-intensity sport with frequent physical contact between players. The physical demands are characterized by intermittent sprinting. Match play involves high-speed running forwards, backwards as well as sideways, plant and cutting movements, jumps, landings, turns, and repeated acceleration and deceleration movements. Most of the play in handball involves balancing on one or two legs while catching, bouncing (dribbling) or throwing the ball with one hand. With rough tackles and frequent body checking, there is an obvious risk of injuries in handball. Naturally, the injuries are a growing cause of concern as the sport develops, along with an increasing popularity. The risk of injuries has been emphasizes in relation to the dynamic characteristic of the game, the aggressiveness

and the frequent physical contact between players (Ronglan et.al, 2006, Myklebust et al., 1997).

Handball is a game with considerable body contact. It is therefore not surprising that about 2/3 of all injuries occur in official matches and 13% in competitive exercises during normal training and other forms of training which include one-on-one situations (Henke & Heck 1995).

Darrow et al. (2009), the influencing factors in reducing the number and severity of injuries that plague the organizations and individuals of the sports complexes cannot be identified and discovered without grounding in performing epidemiological studies.

Handball is very complex sports where successful performance depends on a number of basic abilities in particular endurance, speed, Strength, power, and their derivatives (acceleration, sprinting, and jumping) all make important contributions to the performance potential of Handball project players. Actually, every activities has its own risk, injury is one that hinder the performance of players in different stages.

Increasing participation in physical activity and sports has also increased the incidence of sports injuries (Parkkari 2011). The injury risk in handball is substantial was confirmed through the International Olympic Committee (IOC) injury surveillance study from the most recent Summer Olympic Games. In this study by Engebretsen et al. 7 they reported that 22% of handball players suffered from an injury during the 2012 London Games.

The country has no equivalent coaches to train Male Handball project players as their numbers, and sport medicine professional to examine trainee's current status and future, and aware the potential risk of injuries as well as advice how and when it occurs. In addition, help players to be treated and rehabilitated, and back to peak performance.

In Ethiopia, Handball is an upcoming sport, played by Men and Women almost in all regional states and Universities. Since the researcher is a player and going to finishing M.Sc. degree in handball coaching. Researcher felt that there is a need for an analytical study in order to discriminate the factors associated in predicting the sport injury in Gedeo Zone Dilla Town Male Handball project trainee athletes. Moreover, very little research had been done on Handball players, which motivate the investigator to take up the study.

Statement of the problem

Projects play very big role for the development and growth of many sports such as handball projects. The Ethiopian Handball Federation inaugurated with primary goal of launching handball projects to recruit talented future athletes in Dilla Town and surrounding area in 1997 E.C. at regional level.

However very low progress has been seen, some of the reasons for the decline of the sport were indicated by Mebrtu (1986) include: financial constraints, human power limitation (trained coach) and less awareness given. Similarly, according to Asefa (2013) the Ethiopian handball development is described that even if tremendous effort made and the game's historic background there is no development any more.

In addition, for the last three years the researcher has lived in Gedeo Zone Dilla Town. During this stay the researcher had an opportunity to watch Dilla Town Male Handball project Players in training and competitions but no significant research was conducted in the Male Handball projects Players. Thus, this study was designed to examine and to provide remedial solutions for the project players that are why the researcher interested to find out the causes of sport injures which have hindered the project players during training and competition.

In order to get good result interims of clubs as well as at national team, we have to work hard in project of handball. Project are the bases for the achievement of clubs as well as for the national teams and its mandatory to shape the child with scientific training to a figure skill full performance and having successful result it's better to work at lower age of the child from the beginning which is at grass root so that in Gedeo Zone. There are two (2) Male Handball project in Dilla Town. Dilla Town is one of the bigger Towns in Gedeo Zone and selected for the study on "The Causes of Sport Injuries in the Case of Gedeo Zone Dilla Town Male Handball Project players".

General objective

The general objective of this study was to predict the Sport Injuries from selected Causes Sport Injury variables in the Case of Gedeo Zone Dilla Town Male Handball Project Players.

Specific objectives

1. To find out the relationship between poor medical checking and injuries in Male Handball project players.
2. To find out the relationship between poor coaching and injuries in Male Handball projects players.
3. To examine the relationship between the causes of sport injuries rates in training and competition and injuries in Male Handball project players.
4. To examine the relationship between lack of physical fitness and injuries in Male Handball project players.
5. To find out the relationship between lacks of values fluids intake and injuries in Male Handball projects players.
6. To find out the relationship between lack of facilities and equipment's and injuries in Male Handball projects players.
7. To find out the relationship between lack of the values to nutrition and injuries in Male Handball project players.
8. To predict the sport injuries from Lack of preparation screening/medical

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checking, poor coaching/coaching error, lack of physical fitness, rates of injury in training and competition, lack facilities and equipment's, lack of the values of fluids intake and lack of the values of nutrition in Male Handball project players.

Delimitation of the study

This study was delimited to:

1. The study was delimited to Gedeo Zone Dilla Town Male Handball project players.
2. Only two projects totally forty Six (N=46, aged 14-20) Male Handball project players, U/16 players (n=24) and U/20 (n=22) from each projects to act as subjects in this study.
3. The study was delimited to selected sub variables sport injuries causes like Improper motion, Improper rest, Overtraining, Lack of warming-up, Lack cooling-down, Lack of knowledge, Unbalanced diet, Protective equipment, Playing ground, Re-injury and Water intake (Before, During and After).

Limitation of the study

The researcher did not believe that the study was totally free from any type of limitations. The factors like, scarcity of sources research materials in a local context, time and financial constraints affected the researcher's schedule to conduct the research effectively, which were considered as limitations of this study.

Significance of the study

The study would provide certain necessary information and might help to enrich the players, coaches and coordinator in creating awareness concerning the major Causes of Sport Injuries in the Case of Gedeo Zone Dilla Town Male Handball Project Players during prolonged training and competitions. In regarding to this, the following are significance of the study.

The findings of this study would be important in the following respect:

1. To help the players to find out causes of sport injures in Male Handball project players.
2. To enrich and investigate the coaches, players and coordinator how the sport injures would be occurred in Male Handball project players.
3. To help the players, coaches and coordinator the sport injuries causes like Improper motion, Improper rest, Overtraining, Lack of warming-up, Lack cooling-down, Lack of knowledge, Unbalanced diet, Protective equipment, playing ground, Re-injury and Water intake (Before, During and After) for the occurrence of injures.
4. To help the players, coaches and coordinator incorporate some new result of the findings into the causes of sport injuries.
5. To help the trainee's favorable suggestions that help in peak performance after injures in Male Handball project players.
6. The result of this study is was help the young budding researcher to take up similar studies in other areas and disciplines.

Materials and methods

This Chapter outlines the manner that the researcher was used in conducting this study. The key components are the research design, study area, population of study, sample size and sampling technique, selection of variables, data gathering instrument, procedure of data collection, and data analysis.
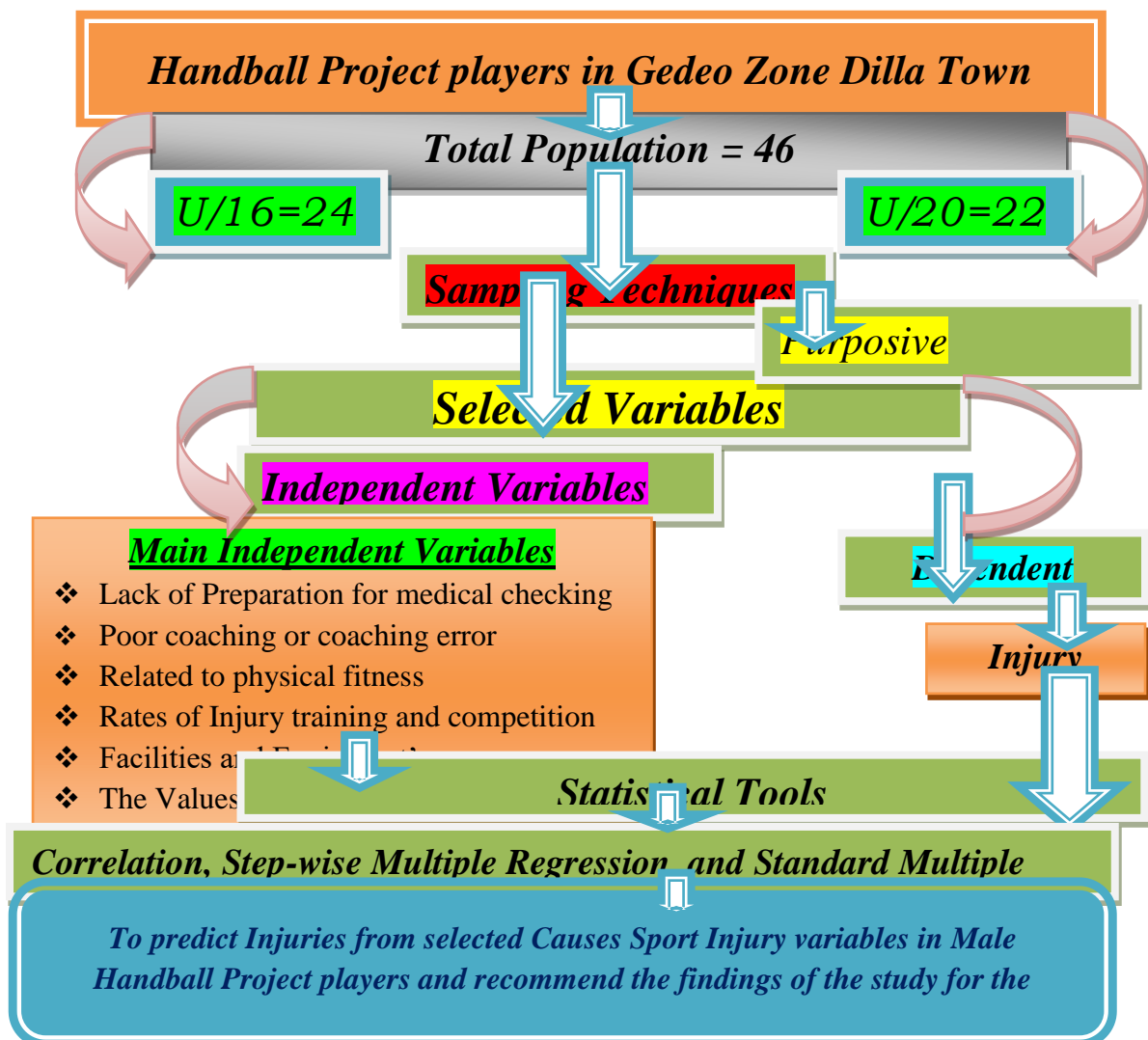
Research Design

The researcher used the co-relational research design in order to examine the major causes of Sport Injuries particularly in the Case of Gedeo Zone Dilla Town Male Handball Project Players. According to Fraenkel and Wallen (1996), co-relation research describes an existing relationship and differences between different independent and dependent

variables. Thus, the study design used for data analysis was the quantitative approach because it was based on variables measured with numbers and analyzed with statistical procedures.

Handball Project players in Gedeo Zone Dilla Town

Total Population = 46

U/16=24

U/20=22

Sampling Techniques

Purposive

Selected Variables

Independent Variables

Main Independent Variables

❖ Lack of Preparation for medical checking
❖ Poor coaching or coaching error
❖ Related to physical fitness
❖ Rates of Injury training and competition
❖ Facilities and Equipment
❖ The Values

Dependent

Injury

Statistical Tools

Correlation, Step-wise Multiple Regression and Standard Multiple

To predict Injuries from selected Causes Sport Injury variables in Male Handball Project players and recommend the findings of the study for the

Analysis and Interpretation of Data

the major findings of the collected data through the instruments designed for this study. The procedure used just after collecting the data was organizing the information by using appropriate tools, analysis and finally interpretations were made. Hence, the results of the study were presented in three sections. First, demographical characteristic of subject were analyzed by using frequency and

percentages. While the second part deals Pearson correlation was used to show the relationship between sport injuries causes like lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury in training and competition, lack of facilities and equipment's, lack of values fluids intake and lack of the values of nutrition and injuries. Finally Step-wise multiple regression and Standard multiple regressions were performed to predict the causes of injuries in Handball project based on different variables.

As stated in the planed number of samples (subjects) selected to fill the questionnaire were 46 from two projects players (U/16 =24 and U/20=22) of which 46 were both male respondents. Even though the sample sizes were 46, the total numbers of respondents who completed the questionnaire correctly and consistently. Therefore, the results were analyzed based on 46 subjects.

General Demographic Characteristics of Handball Project Players

This section deals with demographic characteristics of the respondents: gender, age, educational level and duration of training in the Handball project Players. The demographic characteristics (i.e., expressed by frequencies and percentages) of the study sample are displayed in Table1.below.

Table, 1. Demographic Characteristics

Items		U/16		U/20		Total
		F	**%**	**F**	**%**	
Sex	Male	24	52.17	22	47.83	**100%**
	Female	-	-	-	-	
Age	Below 14 Years	-	-	-	-	
	14-18 Years	14	30.43	13	28.27	**100%**
	19-20 Years	9	19.56	10	21.74	
	Above 20 Years	-	-	-	-	
Educational level	1-4 Grade	-	-	-	-	
	5-8 Grade	24	52.17	22	47.83	**100%**
	9-10 Grade	-	-	-	-	
Duration of training	1-6 Months	-	-	-	-	
	7-12 Months	7	15.22	10	21.74	**100%**
	1-2 Years	13	28.26	16	34.78	
	3 Yrs & above	-	-	-	-	

As indicated in above Table 1, 46 Handball players from two projects (U/16 =24 and U/20=22) were involved in the study, as shown in table, from U/16 = 24 (52.17%) and U/20=22 (47.83%) of the players respondents are Male Handball players concerning the age of respondents 14-18 U/16 =14 (30.43%) and U/20=13 (28.26%) and between 19-20 years U/16 = 9 (19.56%) and U/20=10 (21.74%) of age levels. As the table above shows majority of the respondent's educational level of respondents 46 (100%) are grade 5-8.

Finally duration of training in the project U/16 = 7 (15.22%) and U/20=10 (21.74%) are only 7-12 months and U/16 = 13 (28.260%) and U/20=16 (34.78%) are 1-2 Years experiences in Handball project.

Descriptive Statistics

Table 2, Descriptive statistics of selected causes of sport injuries like lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury in training and competition, lack of facilities and equipment's, lack of values of fluids intake and lack of the values of nutrition and to predicting total injuries in handball Players.

	N	R	Min	Max	Mean	Std. Deviation
Lack of Preparation for screening/medical checking	46	7.00	18.00	25.00	23.0217	1.74470
Poor coaching or coaching error	46	7.00	33.00	40.00	36.3478	1.40186
Related to physical fitness	46	6.00	14.00	20.00	17.5217	1.83472
Rates of Injury training and competition	46	3.00	7.00	10.00	8.8261	.76896
Facilities and Equipment's	46	5.00	23.00	28.00	25.6304	1.32260
The Values of fluids intake	46	4.00	9.00	13.00	10.6087	.80217
Related to Nutrition	46	4.00	6.00	10.00	7.8478	.78789
Injury Total	46	39.00	343.00	382.00	3.8130E2	.46522
Valid N (listwise)	46					

From the above Table 2, indicates that the results respondents' majority replied as "agree" and "strongly agree" and "high" and "very high" for variables respectively. Mean and standard deviations between lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury in training and competition, lack of facilities and equipment's, lack of values fluids intake and lack of the values to nutrition and to predicting total injuries were (23.021±1.744), (36.347 ± 1.401), (17.521±1.834) (8.826±0.768), (25.630±1.322), (10.608±0.802), (7.847±0.787) and (3.813±0.465) respectively.

Pearson Correlation Relationship Dependent and Independent Variables

Table 3, Inter-Correlation of Selected causes of sport injuries like lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury in training and competition, lack of facilities and equipment's, lack of values of fluids intake and lack of the values to nutrition and predicting total injuries in Handball project players.

	LPStotal	PCtotal	RPFtotal	RITCtotal	FEtotal	VFItotal	RNtotal	injurytotal

LPStotal	Pearson Correlation	1	.242	.302*	.036	.090	.197	.099	.293*
	Sig. (2-tailed)		.105	.041	.812	.551	.190	.511	.048
	N	46	46	46	46	46	46	46	46
PCtotal	Pearson Correlation	.242	1	.559**	-.211	.059	.242	.129	.096*
	Sig. (2-tailed)	.105		.000	.160	.697	.105	.391	.041
	N	46	46	46	46	46	46	46	46
RPFtotal	Pearson Correlation	.302*	.559**	1	-.391**	-.029	-.115	-.036	.286*
	Sig. (2-tailed)	.041	.000		.007	.850	.447	.812	.043
	N	46	46	46	46	46	46	46	46
RITCtotal	Pearson Correlation	.036	-.211	-.391**	1	.132	.247	.249	.220*
	Sig. (2-tailed)	.812	.160	.007		.382	.097	.095	.034
	N	46	46	46	46	46	46	46	46
FEtotal	Pearson Correlation	.090	.059	-.029	.132	1	.007	.094	.233*
	Sig. (2-tailed)	.551	.697	.850	.382		.962	.534	.019
	N	46	46	46	46	46	46	46	46
VFItotal	Pearson Correlation	.197	.242	-.115	.247	.007	1	.044	.139
	Sig. (2-tailed)	.190	.105	.447	.097	.962		.770	.356
	N	46	46	46	46	46	46	46	46
RNtotal	Pearson Correlation	.099	.129	-.036	.249	.094	.044	1	.030
	Sig. (2-tailed)	.511	.391	.812	.095	.534	.770		.845
	N	46	46	46	46	46	46	46	46
injurytotal	Pearson Correlation	.293*	.096*	.286*	.220*	.233*	.139	.030	1
	Sig. (2-tailed)	.048	.041	.043	.034	.019	.356	.845	
	N	46	46	46	46	46	46	46	46

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

According to the above Table, the relationship between lack of preparation for screening/medical checking and total injuries were investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There is statically significant correlated between the two variables r (46) =.293, p = 0.048, at the 95% of confidence level. This indicates that total injuries would be significant relationship it's affected by their lack of preparation for screening/medical checking.

The relationship between poor coaching/coaching error and total injuries was investigated using Pearson product-moment correlation coefficient. There is statically

significant correlation between the two variables r (46) = .096, p = 0.041, at the 95% of confidence level. This indicates that total injuries would be significant relationship it's affected by their poor coaching/coaching error. The relationship between cause of sport injuries related to lack of physical fitness and total injuries were investigated using Pearson product-moment correlation coefficient. There is statically significant correlation between the two variables r (46) = .286, p = 0.043, at the 95% of confidence level. This indicates that total injuries would be significant relationship it's affected by their lack of physical fitness.

The rates of injury in training and competition and total injuries were investigated using Pearson product-moment correlation coefficient. There is statically significant correlation between the two variables r (46) = .220, p = 0.034, at the 95% of confidence level. This indicates that total injuries would be significant relationship it's affected by an increase in project trainee's rates of injury in training and competition.

The relationship between lack of the value facilities and equipment's and total injuries were investigated using Pearson product-moment correlation coefficient. There is statically significant correlation between the two variables r (46) = 0.233, p = 0.019, at the 95% of confidence level. This indicates of facilities and equipment's associated with high levels of total injuries.

The relationship between the values of fluids intake and lack of the values of nutrition and total injuries were investigated using Pearson product-moment correlation coefficient. Lack of the values of fluids intake and lack of the values of nutrition and total injuries were not statically significant correlation between the two variables, r (46) = 0.139, p = 0.356 and r (46) = .030, p = 0.845 respectively. This indicates of Lack of the values of fluids intake and lack of the values of nutrition not associated with high levels of total injuries.

Table 4, Step-Wise Multiple Regression between Total Injuries and Independent Variable like Lack of Preparation for screening/medical checking, Poor coaching or coaching error, Related to physical fitness, Rates of Injury training and competition, Facilities and Equipment's, Lack of the Values of fluids intake and Lack of the Values of Nutrition of Handball Project players.

	Variables	**R**	**R Squared**	**Adj. R Squared**	**Std. Error**
1	Lack of Preparation for medical checking	0.293	0.864	0.652	1.161
2	Poor coaching or coaching error	0.339	0.115	0.074	1.156
3	Related to physical fitness	0.492	0.242	0.187	0.089
4	Rates of Injury training and competition	0.534	0.244	0.170	1.094
5	Facilities and Equipment's	0.552	0.275	0.185	0.083
6	The Values of fluids intake	0.571	0.275	0.164	0.098
7	Related to Nutrition	0.598	0.289	0.159	0.102

From Table 4, it was found that the Step-Wise Multiple Regressions for predictors, such as lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury in training and competition, lack of facilities and equipment's, lack of values of fluids intake and lack of the values of nutrition was 0.598

(60%) which produce highest multiple correlations with total injuries. 'R' square values show that the percentage of contribution of predictors to the total injuries (Dependent variables) is in the following order.

1. About 29% of the variation in the total injures was explained by the regression model with one predictor, lack of preparation for screening/medical checking.

2. About 34% of the variation in the total injuries was explained by the regression model with two predictors, lack of preparation for screening/medical checking and poor coaching or coaching error. An additional 5% of the variance in the total injuries was contributed by poor coaching or coaching error.

3. About 49% of the variation in the total injuries was explained by the regression model with three predictors, lack of preparation for screening/medical checking, poor coaching or coaching error and related to physical fitness. An additional 15% of the variance in the total injuries was contributed by related to physical fitness.

4. About 53% of the variation in the total injuries was explained by the regression model with four predictors, lack of preparation for screening/medical checking, poor coaching or coaching error, related to physical fitness and rates of injury in training and competition. An additional 4% of the variance in the total injuries was contributed by rates of injury in training and competition.

5. About 55% of the variation in the total injuries was explained by the regression model with five predictors, lack of preparation for screening/medical checking, poor coaching or coaching error, related to physical fitness, rates of injury in training and competition and facilities and equipment's . An additional 2% of the variance in the total injuries was contributed by facilities and equipment's.

6. About 57% of the variation in the total injuries was explained by the regression model with six predictors, lack of preparation for screening/medical checking, poor coaching or coaching error, related to physical fitness, rates of injury in training and competition, facilities and equipment's and lack of the values of fluids intake. An additional 2% of the variance in the total injuries was contributed by the values of fluids intake.

7. About 60% of the variation in the total injuries was explained by the regression model with seven predictors, as lack of preparation for screening/medical checking, poor coaching or coaching error, related to physical fitness, rates of injury in training and competition, facilities and equipment's, lack of the values of fluids intake and lack of the values of nutrition. An additional 3% of the variance in the total injuries was contributed by related to nutrition.

Preliminary multiple regression analyses

Preliminary analyses were conducted to ensure no major violations of the assumptions of multicollinearity, normality, linearity, were there. The results indicated that there were no major violations of the assumptions. Pallant (2007, P.155) explains that to check if there is multiple correlations among the predictors, the "Tolerance and VIF" values presented in the coefficients table are used. Accordingly, a Tolerance value less than 0.1 or a VIF value greater than 10 indicates multicollinearity. Thus, multicollinearity is not a problem in this study as all the Tolerance values were greater than 0.1 and the VIF values were less than 10. On the other hand, the normal probability plot

(P-P) of the standardized residuals and the scatter plot of standardized residuals were used to check whether the normality and linearity assumptions were met. The normal probability plot should indicate points lying in a reasonably straight diagonal line from bottom left to top right. The output from the multiple regression analysis in this study indicated a sound linearity of points along the regression line as it indicated in appendix. Furthermore, Pallant also states that residuals should be roughly rectangular distributed with most of the scores concentrating in the centre (along the 0 line). The output for the scatter plot also appeared to meet this assumption as the distribution of the scores is greatly rectangular in shape. Thus, the analyses in general showed that no major violations of the assumptions have been there. For details, refer to the outputs attached as part of the appendices.

Multiple Regression Analysis of the Overall contribution of (Lack of Preparation for screening/medical checking, Poor coaching or coaching error, Related to physical fitness, Rates of Injury training and competition, Facilities and Equipment's, The Values of fluids intake and Related to Nutrition) in Predicting Injury (n=46).

Table 5, Dependant Variable= Injury (Total Injuries)

Variables	B	SE	ß	r	Pr2	SPr2	P-value
Lack of Preparation for screening/medical checking	.275	.103	.400	.293	.396	.364	.011
Poor coaching or coaching error	.054	.157	.064	.096	.056	.047	.730
Related to physical fitness	-.273	.124	-.418	.286	-.337	-.302	.033
Rates of Injury training and competition	.103	.251	.066	.220	.066	.056	.684
Facilities and Equipment's	.167	.127	.184	.233	.210	.181	.194
The Values of fluids intake	-.022	.235	-.015	.139	-.015	-.013	.926
Related to Nutrition	-.192	.221	-.126	.030	-.139	-.118	.392
R^2	.598						
Adj.R^2	.159						
R	.289						
F	2.212		Sig.048				

The result from standard multiple regression presented in Table above shows that the set of variables entered in to the model ,in combination, statically significant predicted injuries (total injuries) $F_{(7,45)}= 2.212$, $p < .05$: R(.289), R^2(.598) and Adj.R^2(.159). This means that lack of preparation for screening/medical checking, poor coaching or coaching error, related to physical fitness, rates of injury training and competition, facilities and equipment's, the values of fluids intake and related to nutrition together accounted for 59.8% of the variance in injuries (total injuries). R^2 was preferred over the Adjusted R^2 because when a small sample is involved, the R square value in the sample tends to be a rather optimistic overestimation of the true value in the population (Tabachnick & Fidell, 2001, p. 147). On the other hand, the result also implies that some other unmeasured variables accounted for the remaining 40.2% of the variance in injuries.

Discussion on findings

This part discusses about the findings of the data as presented in part one. As stated in chapter one of this research, the main intent of this research was to investigate the relationship between selected variables causes of sport injuries. Based on this objective, detailed quantitative survey results were analyzed in part one of this chapter. In this part detailed discussion of this quantitative survey concerning the relationship between lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury training and competition, lack of facilities and equipment's, lack of the values of fluids intake and lack of the values of nutrition in predicting injury status among respondents is discussed. The reliability of the questionnaire was tested by pilot study by using crombach's alpha test and its reliability level was 0.80 to 0.95 which is found to be acceptable. Related research findings for triangulation are presented.

The findings of this study are consistent with a number of scholars including;
Inter-Correlation of Selected causes of sport injuries like lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury in training and competition, lack of facilities and equipment's, lack of values fluids intake and lack of the values to nutrition and to predicting total injuries in Handball project players.

The relationship between lack of preparation for screening/medical checking and total injuries were investigated using Pearson product-moment correlation coefficient was statically significant correlated between the two variables r (46) =.293, p = 0.048, at the 95% of confidence level. This indicates that total injuries would be significant relationship it's affected by their lack of preparation for screening/medical checking before selection of the players and after injury. Moller M, (2012): conducted the study to assess the injury

incidence in elite handball, and if gender and previous injuries are risk factors for new injuries. Having had two or more previous injuries causing absence from handball for more than 4 weeks increased the risk of new injury in the u-16 group 95%. Previous injuries were a risk factor for new injuries among u-16 players. L. T. Ronglan, (2006) predicted the study to investigate the degree of neuromuscular fatigue and recovery from fatigue, following handball training and handball matches at elite level.

The relationship between poor coaching/coaching error and total injuries was investigated using Pearson product-moment correlation coefficient. There is statically significant correlation between the two variables r (46) = .096, p = 0.041, at the 95% of confidence level. This indicates that total injuries would be significant relationship it's affected by their poor coaching/coaching error. Adam "Old School" Knowlden, analyzed a scientific confirmation for the benefits of proper warm-up in relation to athletic events. Athletes generally warm up prior to activity with the purpose of improving performance and reducing the occurrence of injuries. Kamran Shadanfar, (2012); analyzed the effect of a preventive program included passive stretching of muscle groups and relaxation technique as post-exercise cool down in Iranian professional Handball players. Combination of "Passive stretching and relaxation exercises" following "Conventional training" may prove better than "Conventional training session only", for reduction in occurrence of "Musculotendinous unit" injuries.

The relationship between cause of sport injuries related to lack of physical fitness and total injuries were investigated using Pearson product-moment correlation coefficient. There is statically significant correlation between the two variables r (46) = .286, p = 0.043, at the 95% of confidence level. This indicates that

total injuries would be significant relationship it's affected by their lack of physical fitness. Herbert Wagner, Thomas Finkenzeller, Sabine Würth, and Serge P. von Duvillard (2014): conducted study in team handball is a complex sport game that is determined by the individual performance of each player as well as tactical components and interaction of the team. The studies examining individual performance in team-handball players of different experience level, sex or age, there is a lack of studies, particularly for team-handball specific training, as well as cognition and social factors specify the determinants of coordination, endurance, strength and cognition. L. T. Ronglan, (2006); conducted the study was to investigate the degree of neuromuscular fatigue and recovery from fatigue, following handball training and handball matches at elite level. The results of the study indicate that coaches should consider physical loading and recovery time available when distributing playing time between individual players in international tournaments. B. Chittibabu (2014): predicted the effect of high intensity interval training and anaerobic capacity and fatigue index of male handball players. The study is to find out the efficiency of high intensity interval training on anaerobic capacity and fatigue index of male handball players. It is concluded that high intensity interval training for eight weeks resulted in improvement of anaerobic capacity and fatigue index of male handball players. H. Piry, (2011); conducted the study in injury rates in Iranian Handball Players The results also showed that the rate of injuries in different weeks but the rate of injuries in the beginning and ending weeks is higher in comparison with the middle weeks.

The rates of injury in training and competition and total injuries were investigated using Pearson product-moment correlation coefficient. There is statically significant correlation between the two variables r (46) = .220, p = 0.034, at the 95% of confidence level. This indicates that total injuries would be significant relationship it's affected by an increase in project trainee's rates of injury in training and competition. Moller M, (2012): predicted the injury incidence in elite handball, and if gender and previous injuries are risk factors for new injuries. Having had two or more previous injuries causing absence from handball for more than 4 weeks increased the risk of new injury. Susan Rasuli, (2012): predicted the prevalence of sports injuries in Handball players sport injuries rate in the study was very high (100%) and its rate in competition was higher than training period. Muharrem Karanfilci, Banu Kabak, (2013) conducted the study in sports injuries in training and competition for handball players. The injury incidence in relation to exposure in competition and training was 65% and 35%, respectively.

The relationship between lack of the value facilities and equipment's and total injuries were investigated using Pearson product-moment correlation coefficient. There is statically significant correlation between the two variables r (46) = 0.233, p = 0.019, at the 95% of confidence level. This indicates of facilities and equipment's associated with high levels of total injuries. O.E. Olsen, G. (2003) conducted the study to compare the ACL injury rate between two different floor types' wooden floors and artificial floors. Dimitris Hatzimanouil, (2008); predicted the study was the recording of injuries, as these are recorded by the athletes themselves. From the results it appeared that the majority of athletes did not use protective equipment. The frequency of injuries was high (46.8%) and most injuries presented the wings and the pivots. The severity of the injuries in their majority was moderate and serious (77.3%).

The relationship between the values of fluids intake and total injuries were investigated using Pearson product-moment correlation is

not statically significant correlation between the two variables, r (46) = 0.139, p = 0.356. This result implies that when lack of the values of fluids intake is not associated with high levels of total injuries.

Douglas J. Casa, PhD, ATC, CSCS (Chair) 2000: conducted the study on National Athletic Trainers' Association Position Statement: Fluid Replacement for Athletes Journal of Athletic Training. To present recommendations to optimized the fluid-replacement practices of athletes. Dehydration can compromise athletic performance and increase the risk of exertion heat injury. Athletes do not voluntarily drink sufficient water to prevent dehydration during physical activity.

The relationship between lack of the values of nutrition and total injuries were investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Lack of the values of nutrition and total injuries were not statically significant correlation between the two variables, r (46) = .030, p = 0.845. This result indicates of lack of the values of nutrition not associated with of total injuries. According to American College of Sports Medicine, the American Dietetic Association, and the Dietitians of Canada (2000) the American College of Sports Medicine that physical activity, athletic performance, and recovery from exercise are enhanced by optimal nutrition.

Step-Wise multiple regression for predictors, such as lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury in training and competition, lack of facilities and equipment's, lack of the values of fluids intake and lack of the values of nutrition was 0.293 to 0.598(29% to 60%) which produce highest multiple correlations

with total injuries. 'R' square values show that the percentage of contribution of predictors to the total injuries (Dependent variables) in Dilla Town Male Handball Project Players.

The result from standard multiple regression shows that the set of variables entered in to the model, in combination, statically significant predicted injuries (total injuries) $F_{(7, 45)}$ = 2.212, $p < .05$): R (.289), R^2 (.598) and Adj.R^2 (.159). This means that lack of preparation for screening/medical checking, poor coaching or coaching error, related to physical fitness, rates of injury training and competition, facilities and equipment's, lack of the values of fluids intake and lack of the values of nutrition together accounted for 59.8% of the variance in injuries (total injuries). On the other hand, the result also implies that some other unmeasured variables accounted for the remaining 40.2% of the variance in injuries.

G. Langevoort, (2007): analyzed the study in Handball injuries during major tournaments match time. The injuries affected most frequently the lower extremity (42%), followed by injuries of the head (23%), upper extremity (18%) and trunk (14%). The most frequent diagnosis was contusion of head (14%) or ankle sprain (8%). The majority of injuries were caused by contact with another player. Preventive program proven effective should be implemented. Fair Play is an essential aspect of injury prevention. Therefore, close cooperation with the referees is also necessary to make handball a safer sport. **O.-E. Olsen** (2006); conducted the study to examine the injury incidence and pattern of injuries in youth female and male team handball players. These results indicate that the rate of injuries in youth team handball is as high as at the senior level, and prevention should focus on knee and ankle injuries. **Ali Faleh Salman,** (2014); analyzed the study comparison of injuries between male and female handball players in junior and senior teams. Handball injuries are divided into two

types: acute injuries and overloading injuries, and they can fall during training and matches. There are no significant differences detected between the different groups of age and gender concerning injuries, locations of injuries, types of injuries (acute or overload), times of injury (trainings or matches) and periods of absence from trainings and matches, in Swedish teams of handball. Therefore, this proves no differences between genders and ages in injuries.

Summary

The main objective of this study was to predict the Causes of Sport Injuries in the Case of Gedeo Zone Dilla Town Male Handball Project Players. According to the analysis results and discussion of the study, summaries are made on the relationship of dependent and independent variables. The empirical or findings results of the research were presented in chapter four. The response rates and sample was discussed. Descriptive, Pearson product-moment correlation coefficient, Step-wise multiple regression and standard multiple regressions were utilized to gain a better understanding of the data and presented by means, frequency, percentages and tables. The validity of the instrument was checked by different individuals like English and Amharic instructors in Dilla College of Teacher Education and Wolaita Soddo University instructors. In chapter two different literatures concerning Improper motion, Improper rest, Overtraining, Lack of warming-up, Lack cooling-down, Lack of knowledge, Unbalanced diet, Protective equipment, Playing ground, Re-injury and Water intake were discussed.

In this research was discussed. Correlation study designs were employed. In view of this, the study was adopted correlation survey to collect quantitative data from the respondents. According to Anthony G. Picciano (2011, p121) various sampling techniques were used depending on the type of research to be conducted. This study used 46 project players of the Dilla Town as the total sample size is 46 populations. The researcher was used purposive sampling techniques. According to Patton (1990, p169-186) purposive sampling technique is useful in that we need to pick cases which are easy to and with actors willing to comment on certain draft material. Questionnaires were distributed to a total of 46 players while 46 players participated with a response rate of 100%. Chapter four presented details of results and discussion was presented respectively. The result was discussed over all selected causes of sport injury variables. The result for variables reveals that, there was statically significant relationship between independent and dependent variables.

The relationship between lack of preparation for screening/medical checking and total injuries were investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was statically significant correlated between the two variables r (46) =.293, p = 0.048, at the 95% of confidence level. This indicates that total injuries would be significant relationship it's affected by their lack of preparation for screening/medical checking.

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95% of confidence level. This indicates that total injuries would be significant relationship it's affected by their lack of physical fitness.

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The relationship between lack of the value facilities and equipment's and total injuries were investigated using Pearson product-moment correlation coefficient. There is statically significant correlation between the two variables $r(46) = 0.233$, $p = 0.019$, at the 95% of confidence level. This indicates of facilities and equipment's associated with high levels of total injuries.

The relationship between the values of fluids intake and lack of the values of nutrition and total injuries were investigated using Pearson product-moment correlation coefficient. Lack of the values of fluids intake and lack of the values of nutrition and total injuries were not statically significant correlation between the two variables, $r(46) = 0.139$, $p = 0.356$ and $r(46) = .030$, $p = 0.845$ respectively. This indicates of Lack of the values of fluids intake and lack of the values of nutrition not associated with high levels of total injuries.

Step-Wise multiple regression for predictors, such as lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury in training and competition, lack of facilities and equipment's, lack of the values of fluids intake and lack of the values of nutrition was 0.293 to 0.598(29% to 60%) which produce highest multiple correlations with total injuries. 'R' square values show that the percentage of contribution of predictors to the total injuries (Dependent variables) in Dilla Town Male Handball Project Players.

The result from standard multiple regression shows that the set of variables entered in to the model, in combination, statically significant predicted injuries (total injuries) $F(7, 45) = 2.212$, $p < .05$: R (.289), R^2 (.598) and Adj.R^2 (.159). This means that lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury training and competition, lack of facilities and equipment's, lack of the values of fluids intake and lack of the values of nutrition together accounted for 53.8% of the variance in injuries (total injuries). On the other hand, the result also implies that some other unmeasured variables accounted for the remaining 40.2% of the variance in injuries.

Conclusion

Based on the basic research question and objective of this research the following conclusions were made. The whole results written above were concluded in to three major categories. Based on Pearson product-moment correlation coefficient, Step-wise multiple regression and Standard multiple regressions.

1. There was statistically significant relationship using Pearson product-moment correlation coefficient between Lack of preparation for screening/medical checking and total injuries. Therefore, it was concluded that total injuries would be significantly affected by their lack of preparation for screening/medical checking Male Handball project players.

2. In terms of poor coaching or coaching error, there was statically significant correlation between causes of sport injuries related to poor coaching or coaching error and total injury. It was concluded that Dilla Male Handball

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project players face lack of sport professionals in the area of scientific coaching and training for talented young handball players. Poor coaching such as Lack of systematic and scientific training during coaching, lack of proper motion, lack of proper techniques in landing after jump shot, lack of well-designed training program, Lack of knowledge in coaching etc.

3. The relationship between cause of sport injuries related to lack of physical fitness and total injuries were investigated using Pearson product-moment correlation coefficient. There was statically significant correlation. Therefore, it was concluded that Handball project players have no regular training schedule either short or long term to developing their physical fitness. The lack conditioning causes the project players expose to sport injuries in Gedeo Zone Male Handball project players.

4. The rates of injury in training and competition and total injuries were investigated using Pearson product-moment correlation coefficient. There was statically significant correlation between rates of injury in training and competition and total injury. Extensive training or extra training habit lead causes sport injuries like knee injuries, ankle injuries, back pain (Hip), foot injuries etc.

5. The relationship between lack of facilities and equipment's and total injuries were investigated using Pearson product-moment correlation coefficient. There was a statically significant correlation. Therefore, it was concluded that Sport facilities and equipment are grossly inadequate and

less comport for project players during training and competition. The lack of sport wear also causes sport injuries in Gedeo Zone Dilla Male Handball project players.

6. The relationship between lack of the values of fluids intake and lack of the values of nutrition and total injuries investigated using Pearson product-moment correlation coefficient there was not statically significant correlation.

7. The result from Step-Wise multiple regressions for predictors, such as lack of preparation for screening/medical checking, poor coaching or coaching error, lack of physical fitness, rates of injury in training and competition, lack of facilities and equipment's, the lack of values of fluids intake and lack of the values of nutrition were increased 29% to 60% which produce highest multiple correlations with total injuries in Dilla Town Male Handball project players.

8. The result from Standard multiple regression shows that the set of variables like Lack of preparation for screening/medical checking, lack of physical fitness, rates of injury in training and competition, lack of facilities and equipment's, lack of the values of fluids intake and lack of the values of nutrition and total injuries entered in to the model, in combination, statically significant predicted injuries in Dilla Town Male Handball project players.

Recommendations
Based on the finding of the Causes of Sport Injuries in the Case of Gedeo Zone Dilla Town Male Handball Project Players, the following possible solutions are suggested in hoping that the problems would be resolved.

Therefore, concerned bodies in the project should accept the following recommendations which are based on research findings.

1. The project concerned bodies should give appropriate medical checking/screening the players during selection and after back of injuries. Medical checking helps to minimize re-injury and heredity factors associated from her family. The projects are not well organized as to manage the players medical checking, the absence of project physician would hinder the prevention of injuries and late rehabilitation as well as aggravate acute injuries because of ignoring feeling of pain, and continuing training and competition.

2. The concerned bodies should assign qualified coaches for project players to developing their playing abilities both training and competition. Coach must be selected based on qualification, skill and competency. The skilful caches give scientific and systematic training and also have knowledge's of coaching philosophy.

3. The concerned bodies fulfill for project players facilities and protective equipments like Jonikera, cushioned shoes, playing ground and its impact etc to minimize foot injury. Support the projects by provision of necessary equipments and facilities. Sport wear inadequate and less comport for project players during training and competition and it also minimize or decrease the range of movements.

4. The concerned bodies' plan program for training schedule either short or long term to developing their physical fitness for the project players. The coach's use appropriate training load based on their skills and age levels to develop the project trainee's physical fitness.

5. The concerned bodies should assign qualified and experienced coaches that can handle project to developing the trainee's skills and training process. The skilful coaches give systematic and scientific training during coaching and he also knows the principle of training in doing so avoids lack of awareness of players about proper warming up, cool down, and stretching would lead injuries.

6. The project concerned bodies know the values of fluids intake during training and competition**.** The concerned body's advice and gives motivation to get enough water intake before, during and after during training and competition project players.

7. The concerned bodies know the values of nutrition during training and competition**.** Lack of necessary nourishment would affect muscles strength, weakness in muscle joints, limited range of motion and unable to bear weight during training and competition.

8. The result of this study will help the young budding researchers to take up similar studies in other areas and disciplines.

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