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بسم الله الرحمن الرحيم

EDITORIAL

Al-Hamdo-Lillah, with the kind blessings of Almighty Allah (SWT), and Darood-o-Salaam on Last of His Prophets, Muhammad صلى الله عليه وسلم. The Editorial Board (EB) of Pak.JLSc. in its 15th and 16th meeting accorded approval of publishing this 12th volume, No.12, in hand.

With day-to-day petty improvements, each Research Article clearly will carry, on its face the date received, date-accepted and date-published.

We received 14 Research articles out of which 11 cleared, 02 dropped and one not approves by peer referees. Since our clientele have now crossed 515 and we are regularly distributing 80% on gratis bases, we have, as per policy recommendation of EB, reduced the number of copies to 200 as 4-5 people in one organization can benefit from one, copy as well as to reduce cost of publishing with 20% distribution on cost basis.

We are confident that Higher Education Commission (HEC) will finally accord its formal recognition, long pending since 08 years. The ISSN, authorities simultaneously requested to accord/upgrade category of this sustained effort as we are celebrating Decade of Progress, since 2019. The reply was that it is sufficient that Pak JLSc is encoded with print and on-line since 2009, the first issue.

A. We are continuously Indexing and Abstracting our research articles/papers in National Indexing and Abstracting Services (NIABS) Islamabad, an ISSN-encoded entity.
B. While the International Indexing has been done in (a) Directory of Journals Indexing (DRJI); (b) Scientific Indexing Services (SIS); (c) Academic Research Index (ARI) (d) Directory of Open Access Scholarly Resourced (ROAD) and (e) Google Scholar.

(Dr. Muhammad Hafeez)
Chief Editor

RECENT INSTRUCTIONS/GUIDE LINES FOR CONTRIBUTORS

1. The original Articles/Research papers be sent on A-4 size paper with one inch margin on both right and left sides. The test should be on Font No.11.
2. The standard format should be Abstract, Introduction, Review of literature, material and Methods, Result, Discussion, concussions and recommendations followed by references/literature cited (in alphabetical order). Reference must appear in the text and preferably for the last 10 years.
3. Number of tables be restricted to minimum possible as per format.
4. Two printed (hard copies) and a CD (soft copy) may also be enclosed to quicken the process of References evaluation(s).
5. Colour prints, photographs, if indispensable, (include 200 prints/200 photographs with colour scheme advised). This is negotiable.
6. Reference be kept limited (Not more than 20) preferably for the last 5-10 years. Standard format be adopted (APA-Style),1/2 one page.
7. Contribution of Rs.3500/- (three thousand five hundreds only)/article/paper be enclosed upto 5-6 pages. Each extra page will cost Rs.1000/- (one thousand only).
8. Abstracts be limited to one para of 100-150 wards in between he A-4 paper supported in separate line, with Key Words for example.
   Microbiology: Coliform bacilli; E-coli; incidence of food contamination, Pakistan.
   Chemistry; Physico–Chemical analysis; algae, lotus lake water – Pakistan.
9. First screening of the papers will be within one month and acceptance/or other wise will be communicated after a period of 30 (THIRTY) days.
10. Changes/Amendments/Reviewers comments and advises must be attended by the contributor(s) authors and final draft with CDs, be re-submitted to the Chief Editor within 14 days (hard copies, of course).
11. Advertisements be sent according to subscribed rates.
12. Selected Scientific paper/Articles will be subjected to PEER REVIEWING simultaneously by the local as well as Foreign Referees, in accordance with the guidelines of HEC Islamabad Pakistan.
13. Year Schedule of Processing Articles of Each next Volume is also enclosed.
14. Publishing PJLSc. upto this Volume-XII (No.12), 2020 is on Annual basis. The Editorial Board in its 10^{th} and 11^{th} meeting agreed to publish PJLSc. Twice a year (on Bi-Annual Basis), immediate after the formal approval of HEC is obtained, with possible Financial Assistance.
15. We are now available on www.Pak.JLSc.Org as well as On-Line, URL-htpp://www.pjlsc.org.publication and email drmhafeez1949@gmail.com
16. The expenditure incurred on each Publications/volume of PJLSc is dependent on authors contributors and donations of EB Members (No Profit No loss basis)

PROPOSED ANNUAL SCHEDULE OF PROCESSING ARTICLES
Pakistan Journal of Livestock Sciences (PJLSc.)
For Vol-XIII, No.13 (2021)

Arrival of Articles (Receiving)	January – May, 2021
Submission to Referees	June – July, 2021
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15th & 16th Editorial Board Meetings	July – August, 2021
Referring back to Authors	August – September, 2021
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Post-printing reading (addendum if any)	December, 2021
Dispatch to clientele	December, 2021

NB: Acceptance is accorded only when Research Articles are cleared by Respected Referees (both reviewed and peer reviewed)

CELEBRATING
DECADE OF PROGRESS
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2008-2018

بسم الله الرحمن الرحيم

EDITORIAL

Al-Hamdo-Lillah, with the kind blessings of Allah (SWT), and Darood-o-Salam on his last of his Prophets Muhammad (S.A.W). The Editorial Board (EB) of Pak JLSc in its and 14th meeting accorded approval of Publishing volume XII, No.12 in hand and distribution to our clientele.

In this volume, during 2020, a total of 12 articles were received submitted to respected references, 11 cleared and one deffered(for want of corrections, amendments and formatting etc). The articles cleared were within the subjects of Livestock, Agriculture and Rural Development, as our specified domains, by ISSN authorities.

As the cost of printing, composing and mailing has been increased, the token fee of each article was raised from Rs.3000/- to Rs.3500/- Since last year (2019) which shall prevail for the next year as well (2020) Vol-XII, No.12 as maintained by the EB, together with distribution of 80% of Pak.JLSc on gratis basis to academia of various Universities, Research Organizations Ministries and Departments both at Federal and Provinces, with the policy of dispatch of one or two copies per institutions, instead of 05-06 copies, as practiced earlier.

The lead article was declared Article No-11 entitled “Better expectations in agriculture, Livestock and Fisheries production with govt. interventions wherein Prime Ministers Agriculture Emergency Program (PMAEP) worth Rs.297.602 Billion allocated for 4-5 years w.e.f. 2018-19 to 2022-23 (under 12th Five-year plan).

The formal recognition by HEC, is still awaited while the up-scaling of Pak.JLSc, has been requested to ISSN authorities to category “Y” or “Z” as we have since completed 10 years continuous, regular Publishing in the year 2018.

(Dr. Muhammad Hafeez)
Chief Editor

IMPACT OF SANITATION ON PUBLIC HEALTH IN TEHSIL RAWALPINDI

Ahsan Ullah [1], Mehwish Siraj [2] and Anam Ahsan[3]

ABSTRACT

This study was carried out to investigate the impact of sanitation on public health in tehsil Rawalpindi in the three targeted villages of Chauntra, Salmoon and Bhal. The total population of households of three villages under study, (in Tehsil Rawalpindi) was recorded as 7900 (N=7900) whereas the H/H population of selected respondents involved in public health awareness and PATS was n1=600, n2= 670 and n3= 300 totaling n=1570 for the villages Chauntra (n-1), Salmoon (n-2) and Bhal (n-3) respectively. The total such flush latrines constructed were 166 out of which 30 (18.07%), 35 (21.08%) and 101 (60.84%) were constructed in the three years of the study respectively. The flush latrines construction under Pakistan Approach for Total Sanitation (PATS) program but community involvement were not completed in the years 2014-15, 2015-16 and in the 2016-17 only to the tune of 19 out of which 05 (26.31%), 06 (31.58%) and 08 (42.11%) in Chauntra, Salmoon and Bhal which was the real out come with the ODF awareness program. In addition to the construction of Open Defecation Free (ODF) induced flush latrines, it was Public Health Engineering Departments (PHEDs) requirement that septic tanks/sewage tanks must also be constructed. The target was achieved, slowly but steadily numbering 10 (33.33%),08 (26.66%) and 12 (40%) in Chauntra while 08 (32%), 09 (36%) and 08 (32%) in Salmoon whereas 06 (28.56%), 07 (33.33%) and 08 (38.1%) in Bhal villages respectively in the study years (i) 2014-15 (ii) 2015-16 and (iii) 2016-17 respectively. The Statistical Approach in the data was presented, using Analysis of Variance (ANOVA) thru stat Pak SAS 2007 and E-Views 09, using "T" test and "F"-Test and significance was worked out to the probability level of $P<0.001$ to $P<0.002$ respectively. It was concluded that out of the total House Holds (H/Hs) 2400, 3500 and 2000 in the three selected villages of our study the activity involved respondents in the awareness meeting programs were 600, 670 and 300 in the area of study.

Key words: Sanitation Public Health PATS Rawalpindi Pakistan.

Article received: May-2020 Accepted: June-2020 Published: Dec-2020

INTRODUCTION:

As understood, the sanitation and water supply together with sewage treatment have been regarded as of prime importance under the Sustainable Development Goals (SDGs) not only in developing countries but in developed countries, as well, According to recent reports over, 850 million people of the world had poor access to water supply and over 2.5 billions had limited access to sanitation facilities (Ashish Joshi *et.al.,* 2013). Simultaneously by contaminating with fecal material, as a result of Open Defecation Habits (ODH), diseases like diarrhea, vomiting schistosomiasis and helminthic infestations were emerging in areas where ODH prevailed, as reported by World Health Organization (WHO) Recent reports, from Asia, Africa and Latin America Communication Diseases Division (CDD) (WHO Geneva (2013). It has also been reported that more than One billion people of the world live in extreme poverty and hunger and are under the threat of pollution and diseases (Bio-diversity Convention-Hails-2008).

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[2]Program Coordinator Rural Development DAS AIOU Islamabad.
[3]Research Scholar M.Phil AIOU Islamabad.

Wherein It was resolved that if pollution, sanitation and bio- diversity were not given attention, these hazards might continue, for unlimited period.

Ministry of Environment has launched a program in the 10th and 11th Five year plan of 2008-09 to 2012-13 and 2012-13 to 2017-18, known as Pakistan Awareness for Total Sanitation (PATS) through-out the country. Rural areas in each Province have been targeted (PATS-2011-16) hence the Government of Punjab, under the 18th Amendment of the Constitution of Pakistan (as the Provinces have been made responsible for water-supply, sanitation and other Environmental Activities), have taken up practical steps to achieve the targeted goals (Govt. of Pakistan 2017-18 and Govt of Punjab-2017).

REVIEW OF LITERATURE

Ashish Joshi and Chioma Amadi (2013) have forwarded a concise but comprehensive account of "Impact of Water, Sanitation and Hygiene Intervention on Improving Health out comes among School Children" and included work done on the subject form 2009 to 2012 less than 18 years. They analyzed 15 studies (73%) (n=11) of these studies conducted in developing countries and out of these, for sanitation were rural based (53%) (n=8). They concluded that (i) the child's age, (ii) gender (iii) grade level, (iv) socio-economic index (v) access to hygiene and sanitary facilities and (vi) prior knowledge of hygiene practices were significantly associated with the outcomes. Encompassing the world wide status, they found, based on information collected from 15 various studies on the subject, over 850 million people had poor access to water supply while over 2.5 billion people had limited access to sanitation facilities. They forwarded their results to the fact that the global burden of disease and mortality rates could be reduced by about 9.1% and 06.3% respectively if rapid access was attained in terms of the facilities of water, sanitation and hygiene.

Pakistan Approach to Total Sanitation (PATS) is concentrating on the targets of (i) community led total sanitation, (ii) school led total sanitation (iii) component sharing (iv) sanitation marketing and (v) disaster response. In this program provinces have already allocated budget with direct coordination and support, to achieve the components namely (a) sanitation demanded creation interventions (b) sustaining Hygiene Promotion Intervention and (d) Drainage and waste water treatment intervention with the guiding principals enumerated as:-(i) Emphasis on "total" while using total sanitation approach achievising 100% behavior change (stopping open defection) with the result of Open Defecation Free (ODF) status in both Rural villages at UC level, with the aim to minimize exposure to human excreta, waste water and

solid waste management. (ii) Placing Communities at the centre (iii) developing a cadre of local human resource (both male and female activists known as Community Resource Persons (CRPs) (iii), using sanitation facilities and (iv) quality facilitation (community facilitation) with the role of Community Based Organization CBOs Community Organization (COS) and Village Organizations (VOs) at village levels. In all the 36 Districts of Punjab Province, including Rawalpindi, 120 villages were targeted since 2011-2012 with construction of flush latrines, on self help basis to the tune of 4068. It was further reported that during the year 2013-14, 3760 could be established. In addition latrines provided to the poor/needy of the poorest (05%) supported through PATS upto 203 were also completed, in the year 2014-15 (PATS-Reports)-(2015-16).

MATERIAL AND METHODS:

We selected UC Chountra comprising 08 villages. Out of these, only three villages namely (i) chauntra (ii) Salmoon and (iii) Bhal were targeted with human population of 2400, 3500 and 2000 inhabitants, respectively. This being the population of each village (n1=2400), (n_2=3500) and (n_3=2000), respectively, for our analytical approach. While the total representative population of the area was regarded as N=7900, house holds. The number of Households Selected in the three villages of this study (i) (ii), and (iii) above was already obtained as 600, 670 and 200 respectively (1570) as member of houses.

Since the research students are practically coordinating and directly involved in PATS Program engaged for awareness of Public health and environment, Under PATS, Punjab, Rawalpindi district, the impact was worked out on statistical based approach, in this study.

RESULTS:

1. Population of House Holds (H/Hs).

The total population of households of three villages under study, in Tehsil Rawalpindi was recorded as 7900 (N=7900) whereas the H/H population of selected respondents involved in public health awareness and PATS was n1=600, n2=(670) and n3= 300 totaling n=1570 for the villages Chauntra (n-1), Salmoon (n-2) and Bhal (n-3) respectively as presented in table No-01.

Table No-01 Response of House Holds Heads (H/H) in the involvement of Public Health Awareness Under PATS program in three years of the study area Rawalpindi.

S.No	Villages	Total H/H	Responses H/H	Flush Latrine Established	% Beneficiary
01	Chauntra	n=2400	600	94	15.66
02	Salmoon	n=3500	670	117	17.46
03	Bhal	n=2000	300	166	55.33
	Total	**n=7900**	**1570**	**377**	**Mean= 29.48**

Table No-02 basic information of construction of flush latrine in the three villages of UC Chauntra Rawalpindi for three study years.

S.No	Villages	Chauntra	Salmoon	Bhal
01	Targets of Lanterns/Toilets	94	117	166
02	Completed 2014-15	18	26	30
03	2015-16	43	29	35
04	2016-17	33	62	101
	Total	**94**	**117**	**166**

2. Respondents Involved:

The respondents involved in the public awareness towards sanitation paractically taking part in the construction of flush latrines was n=377 up to the year 2016-17 and the number was 94 in Chauntra (15.66%), 177 in Salmoon (17.46%) and Bhal=166 (55.33%) with the overall mean percentage of 29.48% in the project area as presented in table No-01.

Table No-01 Response of House Holds (H/H) in the involvement of Public Health Awareness Under PATS program in three years of the study area Rawalpindi.

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03	Bhal	n=2000	300	166	55.33
	Total	**N=7900**	**1570**	**377**	**Mean= 29.48**

3. Construction of Flush Latrines:

The year wise construction of flush latrines for the villages Chauntra was 18 (19.15%) in 2014-15, 43 (45.74%) in 2015-16 and 33 (35.11%) in 2016-17 totaling 94 whereas in the villages Salmoon this number was 26 (22.22%), 29 (24.78%) and 62 (53%) out of 27 in these study years. The total such flush latrines constructed were 166 out of which 30 (18.07%), 35 (21.08%) and 101 (60.84%) were constructed in the three years of the study respectively as detailed in table No-03.

Table No-03 Households and Flush Laterins Constructed und PATS Program with community in the study area Rawalpindi 2017.

S.No	Years	Chauntra	Salmoon	Bhal
01	No. House Holds involved in PATS	600	670	300
02	2014-15	Nil	Nil	Nil
03	2015-16	Nil	Nil	Nil
04	2016-17	05	06	08
	Total	**05**	**06**	**08=19**

4. Work done Under PATS Program:

The flush latrines construction under PATS program with community involvement were slow and not completed in the years 2014-15 and 2015-16 while in the year 2016-17 only 19 could be finalized out of which 05 (26.31%), 06 (31.58%) and 08 (42.11%) were recorded in Salmoon and Bhal villages respectively as detailed in the table No-03 which was the real out come with the ODF awareness program.

Table No-04 construction of septic tanks/septic tanks/ Sewage tanks in three villages of UC Chauntra District Rawalpindi 2014-15, 2015-16 and 2016-17.

S.No	Villages	Chauntra	Salmoon	Bhal	Total
01	Targets of Latrines/Toilets	600	670	300	
02	Target Septic Tank	30	25	21	76
03	Completed 2014-15	10	08	06	24
04	2015-16	08	09	07	24
05	2016-17	12	08	08	28
	Total	**30**	**25**	**21**	**76**

5. The Construction of septic tanks sewage tanks:

In addition to the construction of ODF induced flush latrines, it was Public Health Engineering Departments (PHEDs) requirement that septic tanks/sewage tanks must also be constructed. The target was achieved, slowly and steadily numbering 10 (33.33%),08 (26.66%) and 12 (40%) in Chauntra while 08 (32%), 09 (36%) and 08 (32%) in Salmoon villages whereas 06 (28.56%), 07 (33.33%) and 08 (38.1%) in Bhal villages respectively in the study years 2014-15, 2015-16 and 2016-17 respectively table No-04.

Table No-05 spread of community Diseases in Prior in to Children Flush Latrines constructed in the study area of UC Chauntra Rawalpindi 2017.

S.No	Villages	Chauntra	Salmoon	Bhal	Total
01	Human being affected	170	180	60	410
02	Diarrhea	30	27	11	68
03	Vomiting	18	29	09	56
04	Cholera	22	24	08	54
05	Helminthis	36	20	21	77
06	Pneumonia	20	18	04	42
07	Abscesses	64	62	07	103
	Total	**170**	**180**	**60**	**410**

Incidence of Communicable/Community diseases.

(a) Diseases, Prior to ODF Environment. An incidence commonly observed and recorded in adults as well children were 170, out of 410 (41.46%) of such ailments in Chauntra, 180 (43.90%) in Salmoon our of 60 (14.63%) in Bhal villages.

Table No-05 showing spread of community Diseases in Prior in to Children Flush Latrines constructed in the study area of UC Chauntra Rawalpindi 2017.

S.No	Villages	Chauntra	Salmoon	Bhal	Total
01	Diarrhea	30	27	11	68
02	Vomiting	18	29	09	56
03	Cholera	22	24	08	54
04	Helminthis	36	20	21	77
05	Pneumonia	20	18	04	42
06	Abscesses	64	62	07	103
	Total	**170**	**180**	**60**	**410**

(b) The Community diseases splitted in children and adults:

A total of 120 affectees, in adults were reported suffering from Diarrhea = 29 (24.16%), Vomiting =15 (12.5%), Cholera= 21 (17.5%), Helmithic infestation =35 (29.16%) and Abscesses= 20 (16.16%) while pneumonia cases in adults were not recorded not observed in the study area as detailed in table No-06.

Table No-06 showing the incidence of diseases in Adults before the ODF environment in the study area 2017.

S.No	Villages	Chauntra	Salmoon	Bhal	Total
01	House Holds	600	670	300	1570
02	Adults Affected	46	38	26	120
03	Diarrhea	13	09	07	29
04	Vomiting	06	04	05	15
05	Cholera	08	07	06	21
06	Helminthes	14	10	11	35
07	Abscesses	05	08	07	20
	Total	**46**	**38**	**36**	**120**

Table No-07 showing improvement observed in the control of diseases in the study area (RWP) after ODF environment (Adults)-2017

Sr.#	Villages	Chauntra		Salmoon		Bhal		Total
		Before	After	Before	After	Before	After	
1	Diarrhea	13	02	09	01	07	01	04(29)
2	Vomiting	06	Nil	04	Nil	05	Nil	Nil(15)
3	Cholera	08	Nil	07	Nil	06	Nil	Nil(21)
4	Helminthes	14	02	10	01	11	01	04(35)
5	Abscesses	05	01	08	01	07	01	03(20)
	Total	**46**	**12**	**38**	**07**	**36**	**06**	**25(120)**

(c) Improvement with ODF Environment:

Significant improvement towards decrease of community diseases was recorded as explained and presented in table No-07. The cumulative picture evidenced was Diarrhia reduced to 14 out of 118, Vomiting=04 out of 29. Cholerra and Helmithic infestation was recorded to nil while 04 cases of

Abscesses out of 35 and only 03 cases pneumonia out of 20 cases (in children only) were observed just within two years of the ODF environment. These results have also been presented in more details in table No-08.

Table No-08 improvement of community diseases in Chauntra after ODF environment in the study area, RWP-2017.

S.#	Villages	Chauntra			Salmoon			Bhal		
		Before	After	%	Before	After	%	Before	After	%
1	Diarrhea	30	05	16.66	27	04	14.81	11	02	18.11
2	Vomiting	18	04	22.22	29	03	10.34	09	03	33.33
3	Cholera	22	03	13.64	24	01	4.16	08	01	12.5
4	Helmi-nthes	36	08	22.22	20	07	35	21	04	19.05
5	Abscesses	20	11	55	18	06	33.33	04	01	25
6	Pneu-monia	44	17	38.64	62	11	17.74	07	01	14.28
	Total	**170**	**28**		**180**	**22**		**60**	**12**	

6. Statistical Approach:

The Statistical Approach in the data analysis was done and has been presented, using Analysis of Variance (ANOVA) using stat Pak SAS 2007 and E-Views 09, employing T test and F-Test and significance was worked out to the probability level P<0.001 to P<0.005 respectively as detailed in table No-09 and No. 10 for children as well as adults below:-

Table No 09 showing the statistical analysis results (ANOVA) of impact of ODF environment on the public health (Communicable diseases) in the study area Rawalpindi 2017.

Method		df	Value	**Probability**
Anova F-test		(3, 44)	2.579584	**0.0455**
Welch F-test*		(3, 22.1786)	5.455069	**0.0058**
Analysis of Variance				
Source of Variation		df	Sum of Sq.	Mean Sq.
Between		3	1298.000	432.6667
Within		44	7380.000	167.7273
Total		**47**	**8678.000**	**184.6383**
Category Statistics				
Variable	**Count**	**Mean**	**Std. Dev.**	Std. Err. **of Mean**
Y	12	18.16667	13.15525	3.797594
Chauntra	12	18.16667	13.15525	3.797594
Salmoon	12	17.66667	17.05783	4.924172
Bhall	12	6.000000	5.815340	1.678744
All	48	15.00000	13.58817	1.961283

CONCLUSION:

Based on the efforts made, supported with farmer's coordination the following conclusions have been drawn: -

Out of the total House Holds (H/Hs) 2400, 3500 and 2000 in the selected villages of our study, the activity involved of respondents in the awareness meeting programs were 600, 670 and 300 in the three villages of our study. The target of Flush Latrine constructed were 94, 117 and 166 in the duration period of our study of three

years. The community by themselves, on self help bases also completed 05,06 and 08 such latrines establishing ODF environment in the study villages.

RECOMMENDATION:

As a result of this study findings the following recommendations are made to the effect that: -

Such programs, as the awareness attracted being much helpful for local community (both adults and children), reducing community diseases, be expanded to other rural areas of the district and the country, as well. Open Defecation Free (ODF) environment, as has proved beneficial both for human beings agricultural fields, and livestock, this must be added in the children course books of primary, middle, and secondary classes for awareness. Similar studies, with much broadened objectives, may also be carried out in other parts of the country, especially in rural areas, to achieve a scientifically developed rural areas of our country.

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ANALYSIS OF DROP OUTS IN MIDDLE LEVEL SCHOOLS ACROSS THE GENDER IN RURAL AREA OF TEHSIL RAWALPINDI

Anam Ahsan [1], Shafiq Qadir Memon [2] and Ahsanullah [3]

ABSTRACT

This study was carried out to investigate the drop outs in middle level schools (both Boys and Girls) in Rural Area of Tehsil Rawalpindi in the targeted villages of Chauntra, Salmoon and Bhall. In this study total enrollment was recorded in the years 2014-15 as 115 (56Boys (B) and Girls (G) 59) with the gender ratio of 48.70% (B) and 51.30% (G), from classes I thru Class IV respectively. This enrollment was 101 during the year 2015-16 with gender ratio of B=56 and G=45 of the same classes while the total enrollment in the study period of 2016-17 in Government Primary-cum Middle School Chauntra was 106 with B=52 and G=54 respectively. The targeted classes were VI, VII and VIII and the enrollment for 2014-15 recorded was 56 (B) and 51 (G) totaling 107 with gender percentage being 52.34% (B) and 47.66% (G). The information of total enrolled students of middle level for 2015-16 was 144 with B=81 (56.25%) and G=63 (43.75%) while the enrollment recorded for 2016-17 was 120 with B=67 (55.83%) and G=53 (44.17%) in all the three targeted classes. The enrollment of classes VI, VII and VIII cumulatively recorded for the years 2014-15 as 99 out of which Boys (B) were 47 (46.64%) and Girls (G) were 52 (53.54%). The number of enrolled students for the year 2015-16 of middle classes only, were 117 out of which B=57 (48.71%) and G=60 (51.28%) whereas this number for 2016-17 was B=73 (47.4%) and G=52.6% and of total enrolled as 154, respectively. As per school record, out of all the three village schools, a total of 368 students (both boys and girls) were sent to sit in the BISE-RWP Examination, in the duration of our study (2014-15, 2015-16 and 2016-17) with 188 boys (51.09%) and 180 girls (48.91%). The total drop out out (of three villages) during study periods, were 32, 30 for the years 2014-15, 2015-16 and 2016-17 respectively. The reasons attributed to drop-outs were (i) students discouragement from various directions (ii) financial attraction as child labor, (iii) involving young children helping their parents in economical activities and (iv) shifting the drop-outs to private schools. Further studies have been recommended to be carried out, in the similar parameters in at least each Tehsil, of most of the districts, involving rural schools.

Key Words: Drops Outs Middle Level Rural Area Rawalpindi.

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INTRODUCTION:

Not only in Pakistan but in all the developing and developed world literacy rate is getting immense importance because future generation has been expected to be well educated, as reported in the general meeting of UN Gen. Assembly by UNICEF (2013-14) and UNESCO (2011-12). In a very recent report of expenditure on education in Pakistan it had been 2.2% of the GDP during 2014 which was expected to increase to 4.8% in Pakistan, in the year 2015-16 (world Bank data sheet-2015) and Wasti Ejaz-(2015-16).

If we look at the expenditure being made by SAARC member countries namely Afghanistan 4.6%, 2.0% in Bangladesh, 6.0% in Bhutan, 3.8% in India, 3.1% in Iran and 5.2% in Maldives of their GDP,(SAARC STAT-2015-16). In this research study, we concentrated comparing the enrollment of (a) boys and (b) girl students, up to 10 years of age in A-Primary and B-Middle/Elementary levels (class VI-VIII) in three rural villages

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age in A-Primary and B-Middle/Elementary levels (class VI-VIII) in three rural villages UC Chauntra, district Rawalpindi Punjab Province of the country, involving the targetted rural areas of villages (i) Chauntra (ii) Salmoon and (iii) Bhal, where one school each of primary-cum-middle existed and operational, was studied.

The Net Enrolment Rate (NER), at primary level in Punjab province was recorded as 64% (with 66% boys and 63% girl students during the year 2013-14 while the NER in the year 2014-15 were 61% (with boys as 63% and girls students as 59%), as per Pakistan Social and Living Standards Measurement Survey (SLSMS) Report of GoP 2015-16.

Primary education has been an important stage for a child to be groomed in acquiring very basics of education, in terms of reading, observing, recognizing figers, letters and pictures of many things as per deliberation of the Department of Education, Curriculum Wing (2016).

There were 165.9 thousand primary schools with, 430.9 thousand teachers in the year 2015 with an increase of Primary Net Enrollment (PNE) to 19.8 million students in the year 2015 and 20.2 millions (with an increase of 2.0%) in the year 2016, in the country. Only in Punjab province, the government of Punjab allocated Rs 55.56 Billions (Bns) for total Education out of which Rs 33.17 Bns was exclusively spared for school education, indicated the interest of school education as reported by Ejaz Wasti (2015-16). Under the 18th constitutional amendment, Provincial government have been made responsible, stressing public private partnership educational programs under the Education For All (EFA) approach to satisfy the Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) for the up scaling of children education in the country as per commitments of the Govt, at various international fora.

In this connection Annual Survey of Education Reports (ASER) have also played pivotal role in conducting Monitoring and Evaluation (M & E) of Primary and Middle level schools in the year (2015-16), in all the provinces which efforts were encouraging. In these survey reports training of untrained teachers was imperative and such training programs played positive role in this connection as for training material two teachers Training Manual (TTMs) (of one months duration each) I and TTM (II) were prepared and published in the year 2011 by Muhammad Hafeez *et al* (2011) and Muhammad Hafeez (2012) in which material of B.Ed level was summarized in 10-12 chapters while the second TTM-II pertained to school organization and Administration (with in a school) touches the text material, the school examination, paper evaluation, teaching skills and grooming the

childhood education with teachers work book and parents teachers coordination were elaborated.

The total population of district Rawalpindi, as per 2017 census of Pakistan was recorded as 5405633 (Fifty four Laces, five thousand, Six hundred and 33) 5.405 millions. The number of Males (M) being 27,41,972 (2.74 millions) while females (F) were 26,63,075, (2.66 millions). Out of the total population, the rural males were 12,62,511 (twelve lacs, sixty thousand, five hundred and eleven), 1.262 millions and rural females were 12,67,536 (Twelve lacs, sixty seven thousand five thousand and thirty six), 1.267 million with a total growth rate of rural population being 2.95% as compared to 2.18% in Urban population.

There are Eight (08) Tehsil of district Rawalpindi, namely (i) Taxila, (ii) Rawalpindi, (iii) Kalar Syedan, (iv) Gojar Khan, (v) Kahuta, (vi) Murree, (vii) Kotli Sathian and (viii) Chakri.

MATERIAL AND METHODS:

The District of Rawalpindi has been splitted in Eight Tehsils stated above Seven Union Councils (UCs) of Tehsil Rawalpindi out of which UC Chauntra (comprises 8-9 villages) we targeted 03 villages (for students enrolled for three study years period. The students enrolled in Middle level were taken as N=1190 for three study villages while Village Salmoon were n=450 school children (enrolled) 2014-15, 2015-16 and 2016-17. Village Chauntra were n=370 school children (enrolled) 2014-15, 2015-16 and 2016-17. Village Bhal were n-370 school children (enrolled) 2014-15, 2015-16 and 2016-17. Data for at least three recent years i.e 2014-15, 2015-16 and 2016-17 was collected and comparative trend was worked out, class wise, section wise and village wise, based on statistical approach of correlations (Primary School), with Simultaneous Efforts were made for Middle standard education, on the similar lines:-

REUSLTS:

A- ENROLLMENTS

a. The status of Primary Schools enrollment in the study area:-

The total enrollment was recorded in the year 2014-15 as 115 (56M: 59F) with the gender ratio of 48.70 Boys (B) and 51.30 Girls (G), from class I thru Class IV respectively. This enrollment was 101 during the year 2015-16 with gender ratio of 56=B and 45=G of the same classes while the total enrollment in

the study period of the year 2016-17 in Chauntra Primary School was 106 with B=52 and G=54 respectively as presented in table No-01.

Table No-01 showing the enrollment Primary School Chauntra For the years 2014-15, 2015-16 and 2016-17.

S.No	No of student	2014-15			2015-16			2016-17		
	Class	M	F	Total	M	F	Total	M	F	Total
01	I	14	12	26	12	08	20	14	10	24
02	II	13	14	27	14	15	29	13	17	30
03	III	15	17	32	15	12	27	12	15	27
04	IV	14	16	30	15	13	28	13	12	25
	Total	**56**	**59**	**115**	**56**	**45**	**101**	**52**	**54**	**107**

b. The status of Primary School Enrollment in Village Salmoon:-

The total strength enrolled in this village Primary cum Middle School (Class-I thru IV) was 123 for the year 2014-15 with gender Ratio of 68=B (55.28%) and 55=G (44.72%) while the total enrollment in the year 2015-16, it was 155 with gender ratio 91=B and 64=G students. The total enrollment in classes I thru IV was 161 during the year 2016-17 with gender ratio B=90 AND G=71 giving the percentage of 55.90=B and G=44.09% respectively as presented in table No-02.

Table No-02 showing the Enrollmet of Primary School Salmoon for the years 2014-15, 2015-16 and 2016-17.

S.#	No of student	2014-15			2015-16			2016-17		
	Class	M	F	Total	M	F	Total	M	F	Total
01	I	15	10	25	16	11	27	18	12	30
02	II	18	15	23	28	19	47	25	20	45
03	III	21	20	41	31	24	55	30	26	56
04	IV	14	10	24	16	10	26	17	13	30
	Total	**68**	**55**	**123**	**91**	**64**	**155**	**90**	**71**	**161**

c. The status of enrollment of Primary School Enrollment of Village Bhal:

The total strength of enrolled students in class I thru V in village Bhal for the years 2014-15, 2015-16 and 2016-17 were 113 (B=57 and G=56), 133 (B=69 and G=64) and 140 (B=72 and G=68) with gender percentage of 50.44% (B) and 49.56% (G) for 2014-15, 51.88% (B) and 48.12% (G) for 2015-16 while 51.43% (B) and 48.57% (G) for 2016-17, respectively as presented in table No. 03.

Table No-03 showing the enrollmet of Primary School Bhall for the years 2014-15, 2015-16 and 2016-17.

S.No	No. of student	2014-15			2015-16			2016-17		
	Class	M	F	Total	M	F	Total	M	F	Total
01	I	14	15	29	15	17	32	16	18	34
02	II	12	14	26	09	14	23	12	16	28
03	III	15	13	28	25	17	42	24	16	40
04	IV	16	14	30	20	16	36	20	18	38
	Total	**57**	**56**	**113**	**69**	**64**	**133**	**72**	**68**	**140**

B- MIDDLE SCHOOLS ENROLLMENTS

a. Middle School Enrollments of Village Chauntra:

The targeted classes were VI, VII and VIII and the enrollment for 2014-15 recorded was 56 (B) and 51 (G) totaling 107 with gender percentage being 52.34% B and 47.66% G. The information of total enrolled students of middle level for 2015-16 was 144 with B=81 (56.25%) and G=63 (43.75%) while the enrollment recorded for 2016-17 was 120 with B=67 (55.83%) and G=53 (44.17%) in all the three targeted classes, presented in table No=04.

Table No-04 showing the enrollmet of Middle School Chauntra for the years 2014-15, 2015-16 and 2016-17.

S.No	No of student	2014-15			2015-16			2016-17		
	Class	M	F	Total	M	F	Total	M	F	Total
01	VI	20	18	38	19	22	41	26	24	50
02	VII	15	13	28	17	12	29	18	14	32
03	VIII	21	24	45	26	16	42	23	15	38
	Total	**56**	**51**	**107**	**81**	**63**	**144**	**67**	**53**	**120**
	Gender %	**52.34**	**47.66**	**107**	**56.25**	**43.75**	**144**	**55.83**	**44.17**	**120**

b. Middle School Enrollment of Village Salmoon:

The total enrollment of middle level of Govt. School Salmoon was in the year 2014-15 was recorded as 150 with (B) 61 (47%) and (G) 69 (52%). The recorded number of middle level students for the year 2015-16 were 155 (with B=87 (51.6%) and G=75 (48.4%) while the enrollment for the year 2016-17 in the village Govt. School Salmoon was B=73 (53.33%) and G=77 (46.66%) respectively as detailed in table No-05.

Table No-05 showing the enrollmet of Middle School Village Salmoon for the years 2014-15, 2015-16 and 2016-17.

Sr.#	No of student	2014-15			2015-16			2016-17		
	Class	M	F	Total	M	F	Total	M	F	Total
01	VI	18	17	35	25	20	45	33	24	57
02	VII	21	22	43	29	24	53	27	23	50
03	VIII	22	30	52	26	31	57	28	30	58
	Total	61	69	130	80	75	155	88	77	165
	Gender %	**47**	**53**	**130**	**51.6**	**48.4**	**155**	**53.33**	**46.66**	**165**

c. Middle School Enrollment Govt. Middle-cum Primary School Bhal:

The enrollment of classes VI, VII and VIII, cumulatively recorded for the years 2014-15 was 99 out of which (B) were 47 (46.64%) and Girls (G) were 52 (53.54%). The number enrolled for the year 2015-16 of middle classes were 117 out of which B=57 (48.71%) and G=60 (51.28%) whereas this number for 2016-17 was B=73 (47.4%) and G=52.6% and of total enrolled as 154, respectively, as presented in table No.06.

Table No-06 showing the enrollment of Middle School Village Bhall for the years 2014-15, 2015-16 and 2016-17.

S.No	No of student	2014-15			2015-16			2016-17		
	Class	M	F	Total	M	F	Total	M	F	Total
01	VI	15	20	25	18	26	44	28	30	58
02	VII	12	15	26	12	16	28	16	20	36
03	VIII	21	17	38	27	18	45	29	31	60
	Total	**47**	**52**	**199**	**57**	**60**	**117**	**73**	**81**	154
Gender %		**46.6**	**53.5**	**199**	**48.71**	**51.28**	**117**	**47.4**	**52.6**	154

C- THE STATUS OF MIDDLE SCHOOL SEND-OFFS (CLASS VIII) FOR BISE RAWALPINDI, EXAMINATION.

As per school record out of all the three village schools a total of 368 students (both boys and girls) were send off to sit in the BISE-RWP Examination, in the duration of our study of (2014-15, 2015-16 and 2016-17) with 188 boys (51.09%) and 180 girls (48.91%). The per year record of these village school for 2014-15 03 (54=B) and 49=G. While in the year 2015-16 was 135 (80=B and 75=G) whereas in the year 2016-17 a total of 115 (54 boys and 56 girl) took the class VIII Examination.

D- DROP-OUTS IN MIDDLE CLASSES:

In the total period of our study for three academic year 2014-15, 2015-16 and 2016-17 the drop outs were 06 out of 107 (5.61%) , 09 out of 144 (6.25%) and 12 out of 120 (10%) in the chauntra village school. The drop outs in Salmoon Village Schools were 17 out of 130 (13.1%), 13 out of 155 (8.38%) and 11 out of 165 (6.66%) whereas in the village Bhal there was a dropout of 32 out of 336 (9.52%), 22 out of 416 (5.3%) and 26 out of 439 (5.92%), respectively as presented in table No.08 and No.10 of the results. An overall picture of drop outs was more clarified when year wise and village school wise were analyzed showing 27 out of 370 (7.3%) in Chauntra schools while in Salmoon village the drop outs were 41 out of 450 (9.11%). The drop outs of Bhal Village School recorded were 24 out of 370 (6.48%). The year wise drop outs of three villages combined showed 32 out of 335 (both boys and girls) as 9.55% during 2014-15. This percentage in the year

2015-16 was 30 out of 416 (7.21%) and for the year 2016-17, the drop out cumulative results showed 30 out of 439 (6.83%) respectively as presented in table No-07.

Table No-10 showing percent Total Drop Outs within years and villages schools of this study.

S.No	Villages	2014-15			2015-16			2016-17		
		Drop -Outs	B	G	Drop/ Outs	B	G	Drop -Outs	B	G
01	Chauntra	06	03	03	9	5	4	12	7	5
02	Salmoon	07	12	05	13	8	5	11	7	4
03	Bhal	09	06	03	08	5	3	7	5	2
	Total	**32**	**21**	**11**	**30**	**18**	**12**	**30**	**19**	**11**
	%	**9.85**	**5.9**	**3.09**	**7.21**	**4.33**	**2.88**	**6.83**	**4.33**	**2.51**

CONCLUSIONS:

Based on our three years continuous assessment in the three villages namely Salmoon, Chauntra and Bhal the following convenient conclusion have been made:-

1. The drop-outs in these villages at middle level (with the age of 05-09 years ranged between 5 to 6% which is far less then the national drop outs percentages.
2. The drop outs in one UC Chauntra is comparatively less then the far flung villages of Rawalpindi Division when compared.
3. It was concluded that some of the reasons of the drop outs were not investigated but apparently the parents, the community fellows and some of the droped out students were recorded involved in working in house hold and with parents.
4. The reasons of dropping out still needs and exclusive study be carried out as to what main factors determinants could be involved, in the apparently greater percentage of drop outs, in this area.

RECOMMENDATIONS:

In the light this study, our analysis of the area and the exact picture of drop outs in the last three years at middle level of UC Chauntra from three middle schools, the following recommendation are forwarded:-

1. It is suggested that although the drop out percentage are not alarming, reasons of drop outs need to be assessed in this area.
2. Both the parents and the School teachers need also to be involved and after satisfactory analysis the main reasons be targeted and be addressed both by the local and teachers.
3. It is also suggestively recommended that studies on similar lines also be carried out, in the neighborhood villages and a comprehensive data be analyzed for improvement towards reducing the drop outs in this area.

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THE COMPARATIVE STUDY OF WOOL CHARACTERISTICS OF SHEEP BREEDS (BALOCHI, BIBRIK, HARNAI AND RAKHSHANI OF BALOCHISTAN

Ejaz Ahmed[1] , M.Fatahullah[2] and M.Tariq Tunio[3]

ABSTRACT

This study was carried out to investigate the wool characteristics of four sheep breeds namely Balochi, Bibrik, Harnai and Rakhshani, taking a total of (n=400) wool samples, one hundred samples (n-100) from each breed at Government sheep and goat farm as well as private farmers, The wool quality tests performed were (i) Fleece Weight (F/Wt), Staple Length (S/L), Wool Fiber Diameter (µ) (WFD) and wool crimp per cm. The tests were conducted in the wool testing Laboratory of Animal Science Institute (ASI) of NARC Islamabad. The fleece Wt recorded were 2.27±0.36, 1.78±0.04, 1,66±0.11 and 1.27±0.65 kgs for Balochi, Bibrik, Harnai and Rakhshani while the F/D in µs was recorded as 20.30±0.45, 19.10±0.10, 18.70±0.20 and 18.20±0.15 respectively for these four breeds samples tested. The S/L in cms observed mean values as 8.66±0.11, 7.50±0.65, 10.44±0.75 and 9.30±0.05 cms. Simultaneously the wool crimp per cm recorded for these breeds was 6.7±0.1, 5.8±0.3, 6.4±0.1 and 7.1±0.20 respectively. The statistical approach of Analysis of Variance (ANOVA) was employed in wool quality values with Dunkans "T" test for the evidence of significance to the probability level of P 0.001-P0.05. It was deserved that Spring Fleece Weight (SFWt) P 0.01 was recorded greater than Autum Fleece Wt (AFWT.) kgs to the effect of 1.3%, 2.19%, 8.7% and 5.22% in Balochi, Bibrik, Harnai and Rakshani wool. It was also found that the Fleece Wt of Balochi sheep (2.27±0.36 kgs) was significantly greater (P 0.01) than other three Bibrik, Harnai and Rakshani. At the same time when F/D was observed over Optical Fiber Diameter Analyzer (OFDA), the F/D (µs per cm) of Balochi breed was significantly (P 0.002) greater than the others three breeds Bibrik, Harnai and Rakshani. It was concluded, based on our investigation, that the Fleece Wt. of Autumn 2016 was more in quantity than the spring 2017 F/Wt, in all the four breeds. The average S/L was recorded with the range of min= 7.50 and max= 10.44 µs. It was recommended that since the NARC wool testing laboratory was practically functional, such laboratories may be established in each province of the country for quick analysis of wool and it was also recommended that sheep and goat breeding program be expanded together with cross breeding program supported with economical feed formulas for increased mutton, wool, hair and skin production, for our indigenous requirements as well as export purposes.

Key words: Wool Characteristics Sheep Breeds Balochistan

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INTRODUCTION:

Livestock is an important sector of agriculture. It's role is pivotal towards rural socio economic development. Nearly 8.5 million families are involved in livestock raising, deriving more than 35 percent income from livestock production activities. It is central to the livelihood of the rural poor in the country. It is a source of cash income, providing a vital support and often the only source of income for the rural and most marginal people. It can play important role in poverty alleviation and foreign exchange earning for the country. Livestock contributed approximately 58.6 percent to the agriculture value added and 11.6 percent to the overall GDP during 2016-17 compared to 56.4 percent and 11.7 percent during the corresponding previous year 2015-16, respectively. Gross value addition of livestock at constant cost factor of based on 2005-06 estimates was increased from Rs.1247 billions in 2014-15 to Rs1292 billions 2015-16. As documented byEjazWasti, Pakistan Economic Survey (2015-16).

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Livestock, including cattle buffaloes sheep/goats including poultry, are the main important source of animal proteins such as milk, meat (beef and mutton) including poultry meat. The freshly available data on livestock shows the animal population of cattle=42.8 millions, buffaloes=36.6 millions, sheep=29.8 millions and goats=70.3 millions respectively, as documented in the Pak. Economic Survey Report by Ejaz Wasti-(2015-16)

Sheep & goats are raised for mutton purposes and out of total population of sheep, In the country, more than 13.6 million were found in Balochistan province alone Tariq *et al.,* (2013) while the figer in 2015-16 was 29.8 millions, and reported by Livestock Wing, Ministry of Food Securities and Research with an annual growth rate of 1.18% in 2015-16 while it was 2.3% in 2013-14 and it was 2.1% in 2014-15 respectively (Pak. Economic Survey Report) referred to above.

Sheep alone produced 39000 tons of sheep milk and both sheep and goats produced 686000 (0.6 millions) tons of mutton in the country in the year 2015-16 along with 11.26 million skins (sheep skins and 0.045 million tons of wool, as reported by EjazWasti (2015.16). Sheep wool is used for making blankets, woolen cloth and carpets based on fine, coarse and carpet type of wool of various sheep breeds, of the country.

REVIEW OF LITERATURE:

Shahid Sheikh *et.al.,* (2011) carried out wool characteristics study of four sheep breeds of Azad Jammu & Kashmir (AJK) taking 100 wool samples of each breed (kept with farmers, in their home tract) namely kali, Pahari, and Poonchi. The age of the sheep breeds, on an average were two-tooth or above. Wool samples were subjected to standard procedure of average Clean Wool Yield (ACWY), Fiber Diameter (FD), Staple Length (SL) and Wool Bulk (WB). The results showed highest values for Clean Fleece Yield (CFY) of Poonhi breed as (812.9±9.15) gms with intermediate results of Kail and Kali breeds (873.1±7.4) gms and 883±9.4) gms respectively, revealing non-significant difference ($P<0.05$) Fiber Diameter was measured using Optical Fiber Diameter Analyzer (OFDA). Statistical analysis showed significant difference ($P<0.05$) presenting 28.52±2.81 for Pahari and 26.92±2.91 for Poonchi breeds respectively. Staple lengths for kail kali, Pahari and Poonchi breeds were 5.75±1.06 cm 6.24±1.76, 4.13±1.65 and 6.15±0.88 cms respectively. The wool bulk for these breeds was 2.12±2.28, 3kgms, 1.93±1.71 kgms. They concluded that the wool produced by these four breeds has been more suitable for local cottage industry for manufacturing hand knitted carpets yarn, rugs, lohi, pattu, patti, coats, jackets, caps and namdas etc for local use as well as export purposes.

Tariq *et al.,* (2013) studied the environmental factors as well as assessment of wool characteristics of Mengalisheep, of four flocks (both male and females) locate at three different places namely experimental stations, Experimental Sheep Centre (ESP) Quetta, Mastung and Nushki. The data pertaining to wool characteristics included (i) Autumn Fleece Weight (AFW), (ii) Spring Fleece Weight (SFW), (iii) Combined Fleece Weight (CFW). Univariate Fixed Effect Model (UFEM) as Yuk=u+si+Li+eijk was used. The wool fleece samples were analyzed at wool analysis laboratory, Central Sheep and Wool Research Institute (CSWRI) NARC, Islamabad. The observed averages of autumn fleece weight as 1.35±0.82, CSFW were 1.17±0.75 and Combined Fleece Weight (CFW) as 2.50±064 kgs respectively all the sheep tested in three different locations.

Munir *et al.,* (2010) carried out a study of production assessment of wool and hair in highland Balochistan, Pakistan. The major sheep breeds involved in this study were Balochi, Bibrik, Harnai and Rakhshani while Kajli and Khurrasani were the main goat breeds in the study for collecting samples. The results showed that the average wool production for Balochi, Bibrik, Harnai and Rakhshani was 2.31, 1.8, 1.8 and 1.3 kgms per animal. The study was carried out in two vallies namely Kovak valley (Kalat district) with 54% of samples and Asghara valley (Lorali district0 with 46% samples. The average wool yield for Balochi breed in Kovak Valley was 2.4 and Asghara valley was 2.2 kgs per animal while in Bibrik breed it was 1.8 and 1.6 kgs in these valleys respectively. The Rakhshani breed in Kovak and Harnai in Asghara vallies showed 1.3 kgms and 1.8 kgms wool produced in this study. The data of young and adults was separately been tabulated for while, black and mixed wool along with goat hair data also presented. It was recommended that sorting of wool and better shearing practice would improve wool quality, quantity and fetch more price.

MATERIAL AND METHODS:

The sheep population in Balochistan being 12.37 millions out of which 0.35 millions were reported in the study area regarded as population. This study was conducted in (i) Balochi breed kept at Government Bhagnari Cattle and Balochi sheep farm, Jaffarabad, (ii) Bibrik breed at Government, Karakul Sheep Farm Maslakh, while (iii) Rakhshani sheep study was carried out in the periferee of Quetta District. The study was conducted in the four Breeds. Samples collected and brought to Wool Testing laboratory, Animal Sciences Institute (ASI) of NARC, until processed. The sheep ID was done as under:- All experimental Balochi sheep were properly identified with ID Nos.001-through 100, ear tagged (at government farm). Simultaneously all Bibrik sheep identified through10 to 200, ear tagged (at government farm). Another

100 sheep of Rakhshani, kept with farmers and ID Nos. as 301-400 farmers ear tagged were used for sample collection. One hundred Harnai sheep, properly identified and ear tagged with ID Nos: 301-400 respectively were used for sampling.

RESULTS:

i. **Fleece Weight (Fl/Wt) of the Four sheep breeds:**

When the samples were being collected (Spring 2017) the Fleece Weight was simultaneously recorded and the averaged mean values of Balochi, Bibrik, Harnai and Rakshani were 2.11±0.36, 1.78±0.04, 1.66±0.11 and 1.27±0.65 was respectively. Since the AUT-2016 Fleece Wts were recorded as 2.30,1.82, 1.82 and 1.34 kg. It was evidenced that spring Fleece Weight (SFWT) was comparatively less in Weight as presented in table No-01 and No-05 of the results.

ii. Fiber Diameter of all the four breeds:

The Fiber Diameter (F/D) when observed over Optical Fiber Diameter Analyzer (OFDA) these mean values were 10.30±0.45, 9.10±0.10, 8.70±0.20 and 8.20V0.15 for Balochi, BibrikHarnai and Rakhshani breeds respectively as detailed in table No-02 and No-06 of the results.

iii. Staple Length (S/L-cm results of the sheep breeds:

The staple length was measured in the laboratory in cm. This reading were obtained after the wool samples had been washed (the greese removed in the laboratory), as the greesy wool fibers might sometimes come up with erroneous results. The mean values of Balochi, Bibrik, Harnai and Rakshani were 8.66±0.11, 7.50±0.65, 10.44±0.75 and 9.30±0.05 cms, respectively, as shown in table No-03 and 07 in our results.

iv. Wool Crimp (per cm) of sheep breeds:

We took up this parameter in addition to above wool quality indicators. The crimps per (cm), as observed in (a) Balochi, (b) Bibrik, (c) Harnai and (d) Rakshani mean value were 6.7±0.1, 5.8±0.3, 6.4±0.1 and 7.1±0.20 cms respectively as laid down in table No-04 and No-08 of the results.

v. Average Fleece Weight (AFWt)

a) It was observed that the Average Fleece Weight (AFWt) mean values of Spring Fleece (2017) was significantly lower (P 0.01) than the Autumn Fleece Weight of 2016, in all the four Breeds, Balochi, Bibrik, Harnai and Rakshani to the as 1.3%. 2.19%, 1.7% and 5.22% kgs respectively as presented in table No-01.

b) The Average Fleece Weight was 2.27±0.36 kgs was significantly (P 0.001) higher than other three breeds (Bibrik=1.78±0.04), (Harnai=1.66±0.11) and (Rakshani= 1.27±0.65).

c) The average wool Fiber Diameter of Balochi breed was greater significantly (P 0.002) from other three breeds, the values already detailed in the wool diameter results and presented in table No-02. The maximum and minimum range for Balcohi breed was 12.00 and 8.66 Um.

d) The Staple Length (S/L) was recorded in Harnai breed as 10.44±0.75 and was larger than other three breeds significantly (P 0.001), Balochi (8.66±0.11) Rakshani (9.30±0.0.50) and Bibrik (7.50±0.65), in the 100 samples tested.

Table No-01 showing the comparative Fleece Weight (kgs) mean values of Four sheeps Breeds (kgs) 2014 and 2017.

S.#	Breed	Spring 2017	2016 Autumn	Percentage (+/-)
1	Balochi	2.27	2.30	1.3%
2	Bibrik	1.78	1.82	2.19%
3	Harnai	1.66	1.82	8.7%
4	Rakhshani	1.27	1.34	5.22%

Table No-02 showing the Mean Wool Fibre Diameter (in microns-µ) measured in Four sheep breeds, 2017 (OFDA Readings)

S.#	Breed	Mean (µ)	S.E	Min:	Max:	S.D
1	Balochi	20.33	1.58	18.66	22.00	3.34
2	Bibrik	22.72	2.10	16.44	29.00	4.56
3	Harnai	23.9	0.42	19.50	28.44	0.94
4	Rakhshani	23.29	1.03	17.25	29.33	2.08

Table No-03 showing the Mean values of Staple Length (S/L) per (cm) of four Sheep Breeds (2017)

S.#	Breed	Mean (cm)	S.E	Min:	Max:	S.D
1	Balochi	08.66	01.52	6.34	9.44	3.04
2	Bibrik	07.50	1.59	5.66	8.85	3.19
3	Harnai	10.44	0.70	6.20	8.20	1.4
4	Rakhshani	09.30	1.31	6.70	9.33	2.63

Table No-04 showing the Wool Crimp Measures (Per Cm) of Four sheep breeds of Balochistan 2017.

S.#	Breed	Mean Crimp	S.E	Min:	Max:	S.D
1	Balochi	6.7	0.45	5.8	7.6	0.90
2	Bibrik	5.8	0.05	5.1	6.6	0.10
3	Harnai	6.4	0.15	5.4	7.1	0.30
4	Rakhshani	7.1	0.025	6.80	8.2	0.5

Table No-05 showing the comparative mean values of Fleece Weight (F/Wt) kgs of Four Different Sheep of Balochistan-2017

S.#	Samples ID	Balochi	Bibrik	Harnai	Rakhshani
1	01-10	2.13	1.50	1.40	1.10
2	11-20	2.40	1.70	1.50	1.15
3	21-30	2.11	1.60	1.60	1.13
4	31-40	2.30	2.10	1.70	1.30
5	41-50	3.10	2.15	1.60	1.30
6	51-60	3.10	2.10	1.50	1.10
7	61-70	3.15	1.80	1.70	1.20
8	71-80	3.10	1.75	1.60	1.15
9	81-90	2.40	1.60	1.70	1.20
10	91-100	2.20	1.70	1.40	1.15
	Mean	**2.27±0.36**	**1.78±0.04**	**1.66±0.11**	**1.27±0.65**

Table No-06 showing the mean values of Wool Fibre Diameter (WFD) OFDA of four our different sheep of Balochistan 2017.

S. #	Samples ID	Balochi	Bibrik	Harnai	Rakhshani
1	01-10	21.10	29.80	27.60	27.40
2	11-20	22.10	20.60	27.80	29.30
3	21-30	20.20	28.90	27.60	27.60
4	31-40	29.70	29.60	29.20	28.50
5	41-50	28.60	27.80	27.60	27.50
6	51-60	29.10	20.20	29.40	28.70
7	61-70	20.05	29.70	28.70	27.80
8	71-80	20.20	20.10	27.80	28.50
9	81-90	20.20	28.80	28.70	28.30
10	91-100	20.10	29.10	28.40	8.40
		20.30±0.45	**29.10±0.10**	**28.70±0.20**	**28.20±0.15**

Table No-07 showing the mean Staple Length (S/L cm) of wool Samples tested of four different breeds of sheep, Balochistan, 2017.

S.#	Samples ID	Balochi	Bibrik	Harnai	Rakhshani
1	01-10	7.80	8.15	11.20	9.70
2	11-20	8.30	8.10	8.30	10.10
3	21-30	8.70	8.20	8.18	10.00
4	31-40	8.40	7.30	9.80	9.80
5	41-50	9.10	7.20	9.70	9.30
6	51-60	9.30	7.35	11.10	10.20
7	61-70	9.20	9.10	10.30	8.60
8	71-80	7.80	8.40	9.10	9.10
9	81-90	8.50	8.20	9.00	10.20
10	91-100	8.10	7.50	8.40	8.50
	Mean	**8.66±0.11**	**7.50±0.65**	**10.44±0.75**	**9.30±0.05**

Table No-08 showing the mean values of Crimps (per cm) of wool samples tested of four sheep breeds of Balochistan 2017.

S.#	Ram ID	Balochi	Bibrik	Harnai	Rakhshani
1	01-10	7.6	4.8	6.5	7.1
2	11-20	7.4	7.2	5.8	6.5
3	21-30	6.0	6.1	6.4	7.2
4	31-40	5.7	6.5	6.3	6.4
5	41-50	6.2	5.4	6.4	6.6
6	51-60	6.6	5.6	7.8	7.5
7	61-70	7.4	7.1	6.0	7.4
8	71-80	6.8	5.8	6.5	8.2
9	81-90	5.8	4.9	6.3	6.8
10	91-100	7.5	5.3	6.7	7.5
	Mean	**6.7±0.1**	**5.8±0.3**	**6.4±0.1**	**7.1±0.20**

CONCLUSION:

Based on the efforts made, in the form of this Research Thesis, evidenced through investigative approach, of various wool characters of four sheep breeds (Balochi, Bibrik, Harnai and Rakshani), the following out comes, as conclusion, has been narrated below:-

The Base line data was established in Total Clean Wool Yield (TCWY) (Fleece Weight) was recorded averaged from 100 samples weighed as 2.27, 1.78, 1.66 and 1.27 kgs of Spring Fleece Weight (SFWT) in Balochi, Bibrik, Harnai and Raskshan Rams which was regarded as average. The Staple Length (S/L) in cms for the four breeds was

recorded as 8.66, 7.50 and 10.44 (per cms), as examined in wool testing laboratory of NARC Islamabad and was regarded as Normal. The averaged mean values of wool fiber diameter for these breeds was (23, 28, 28.7 and 28.2) µm when tested over OFDA, in the laboratory and was declared with in the range of sheep data.

RECOMMENDATION:

As a result of this study findings only one recommendation is made to the effect that: -

Although our study was limited to four sheep breeds of Balochistan, towards wool characteristics it is recommended that more parameters be included for further investigation. For sheep production/growth performance as well as wool characteristics, various age groups, both male and females and different places be targeted for creating base line date. Sheep and goat Improved Breeding Programs (IBP) must be expanded in the country for increased multory skins, wool and hair production, for this growing sector of Livestock in the country.

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ROLE OF BASIC HEALTH UNITS IN PROVIDING HEALTH SERVICE MATERNAL AND CHILD OF THREE UCs OF TEHSIL TAXILA RWP.

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ABSTRACT

A study was carried out to find out factual position of OPD Patients seeking health services of three BHUs of Tehsil and UC Taxila and to find out the role of these BHUs played in providing health services to local communities.The total population for the three villages, in the study area namely (i) Pind Noshari, (ii) UsmanKhattar and (iii) Lab Thathu recorded was 18984, 19240 and 27502 while the number of Houses in these villages were 3800, 2472 and 4339 respectively. The year wise number of patients (OPD) PindNoshary BHU for the year were recorded as 10,258, 12366, 14807 and 17710 respectivley. Simultaneously the total number of OPD patients of BHU UsmabKhattar for four study year were 21879, 24745, 29052 and 36297 while number of OPD Patients of BHU, Village lab Thattu, were 13994, 19429, 22150 and 23097. The overall mean values of the three villages human population were 21575.33, the mean number of house were 3536.33, while mean No. of Residents per house (mean number 06).The number of male patients out of total of 10258 OPD Patients who visited for seeking health care services were 3731 (36.37%) and the female patients were recorded as 6527 (63.63%) for the year 2014-15. The number of male and female patients who sought health care services in BHU- UsmanKhattar during 2014-15 were 5089 (23.26%) and 16790 (76.74%) out of a total OPD patients of 21879. The number of male and female for 2015-16 were 5568 (22.5%) and 19177 (77.50%) out of a total of 24745 while number of Males (M) and Females (F) were 7110 (24.47%) and 21742 (75.53%) out of a total of 29052 for the period 2016-17. No Diagnostic Facilities were available but the year 2015-16 the laboratory test facilities were made available in (i) Urine examination (ii) Sugar test (iii) Hemoglobin (HB) together with (a) Hepatitis Screening and (b) Ultra sound Facilities were made available in the year 2016-17 in the area. It was concluded that influx of OPD Patient was increasing specially maternity and children, as analyzed in the rural areas of district Rawalpindi.

Key words: Basic Health Units Child Mortality Taxila

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INTRODUCTION:

Sustainable Developmental Goals-(SDG) came into effect from Ist Jan-2016 which have been a continuation of Millennium Development Goals (MDGs) and incorporated in the “Vision Pakistan-2025”. This approach encompasses all dimensions of sustainable development namely (i) Economic, (ii) Social, (iii) Environmental, and (iv) health together with (v) education, (vi) energy, (vii) water, (viii) Poverty Reduction and (ix) Food and climate for promoting well being of all to be attained by 2030 (Wasti Ejaz-2015-16), while Goal-03 of the SDGs pertain to ensure healthy lives and promote well being for all at all levels.

Pakistan spends US Dollars 37 per capita on human health care, lower than that of WHO’s prescribed amount of USD 44 (a minimum package required for essential health service). The total spending on human health was Rs 133.9 Billions or 0.45% of the GDP which showed an increase of 17.2% as compared to previous year in Pakistan hospitals beds during the recently updated report of M/O Health-GoP (2016). The ratio (GoP) Finance Division-2016).

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The human health care in Pakistan comprises 1167 hospitals 5695 Dispensaries, 5464 Basic Health Units (BHUs), 675 Rural Health Centers (RHCs), 733 Mother and Child Health Centers (MHCs). The health Department manpower indicated 1,84,711 medical doctors (both males and lady doctors), 16652 Dentist, availability of 118869 hospitals beds during the recently updated report of M/O Health-GoP (2016) gram for family planning, (ii) Expanded Program of Immunization (EPI), (iii) Tuberculos control Program, (iv) Malaria Control Program, (v) HIV/AIDS Control, (vi) Civil Registration and Vital Statistics (CRVS), (vii) Prime Ministers Hepatitis Control Program, (viii) Maternal and Child Health (MCH) programs are prevailing the country as well as all provinces, AJK and NAs.

REVIEW OF LITERATURE:

Zubia Mumtaz *et al.,* (2011) analyzed information, on meternal deaths in Pakistan, collected from Northern rural area of Punjab, Pakistan. They covered four parameteric approach to (i) Health service coverage in that area (ii) Medical expenses bearable and (iii) manpower (of health personnel) available in time for such cases together with (iv) Necessary medical aids in the Basic Health Units (BHUs) of that area. They also supported their write-up with health data from 33 middle and low income countries showed that odds of having non skilled medical attendance at the time of delivery in poor quantile were 94% than for women in highest wealth quantile. Their approach was supported with 26 recent references on the subject of research. It was concluded provision of sufficient health services at the PHUs, was help full and Rural Health Centers (RHCs) for expanded health services in the country.

Attia Khan and Shakila Zaman (2010) forwarded a comparative costs of viginal delivery and Caesarean Section (CS) at a tertiary level public hospitals in Islamabad, Pakistan. They provided data of 133 post partum mothers out of which 65 delivered by CS (57.52%) and 48 by Spontaneous Vaginal Deliveries (42.48%) (SVD), admitted in the maternity wards of that hospital. They compared the average cost for a SVD from the Hospital side was USD=40 (Rs 2688/-) and from the patients perspective, it was USD=79 (Rs 5278/-). The CS average cost from the Hospitals side was USD=162 (Rs 10868/-) and USD=204 (Rs 13678/-) from the patients side. It was also worked out that the average house hold income of these patients and found that for Spontaneons Vaginal Delivery cases it was USD 141±27 while in CS patients, the income was USD 168±44. They concluded that apparently “Free” maternity care at government hospitals involves hidden substantial un-predicted costs and inferred that these hidden costs anticipated fears such patients seeking cheaper alternate maternity health care, in rural

communities in Pakistan. Their write-up was supported with 32 National and International references, on the subject from developing world.

MATERIAL AND METHODS:

The Homogenized population of the three villages UCs of study namely (i) Lab Thathoo, (ii) Usman Khattar and (iii) Pind Nowsheri, with their (1) human population, (2) Number of House Holds, (3) No. of Patients provided with health Services will be the population selected for our study (n=0). The total Population of Rawalpindi (RWP) district was taken (N=0) and out of seven Tehsils of RWP, Tehsil Taxila was targeted. Out of Union Concils (UCs) of Tehsil, UC Taxila mainly focused for this investigation study, involving three villages. The human population of which was 18984, 18240 and 27502 for (i), (ii) and (iii) respectively. Specifically the year wise number of Patients of (OPD) for the year 2014-15, 2015-16, (c) 2016-17 and (d) 2017-18 (upto March 2018) were taken. The number of OPD patients of these villages BHUs (both males and females were obtained from the inventory registers, the Annual Reports and OPD Chits together with soft copy records of the computers, for the period involved in this study.

RESULTS:

a. Population

The total population of the three villages, in the study area namely (i) PindNoshari, (ii) UsmanKhattar and (iii) Lab Thathu recorded was 18984, 19240 and 27502 heads while the number of Houses in these villages were 3800, 2472 and 4339 respectively. The year wise number of patients (OPD) of PindNoshary BHU for the year were recorded as 10,258, 12366, 14807 and 17710 respectivley as presented in Table-No-01. Simultaneously the total number of OPD patients of BHU UsmabKhattar for four study year were 21879, 24745, 29052 and 36297 while number of OPD Patients of BHU, Village lab Thattu, were 13994, 19429, 22150 and 23097.

Table No.01 Showing population No. of houses and number HHHs of three villages of UC Taxila District Rawalpindi 2016-17.

S. #	Villages	Total population	No of House	Resident per house	2014-15	2015-16	2016-17	2017-18
1	PindNoshari	18984	3800	05	10258	12366	14807	17710
2	UsmanKhatter	18284	2472	07	21879	24745	29052	36297
3	Lab Thathu	27502	4337	06	13994	19429	22150	23097
	Total	64726	10609	18	46131	56540	66009	77104
	Mean	**21575**	**3536.33**	**06**	**15377**	**18846.66**	**22003**	**5701.33**

b. Gender Wise OPD Patients

(i) Pind Nosheri BHU (2014-15) (2015-16) and (2016-17)

The number of male patients out of total of 10258 OPD Patients who visited for seeking health care services were 3731 (36.37%) and the female patients were recorded as 6527 (63.63%) for the year 2014-15. The figers for male and female patients for 2015-16 out a total of 12366 were 4082 (33%) and 8284 (67%) while recorded patients for the year 2016-17 were 5414 (36.56%) males and 9393 (63.44%) females, out of a total of 14807, as laid down in tables No-02, 03 and 04 respectively.

Table No.02 Showing OPD Patients of three BHUs of UC Taxila with gender and year wise comparison for the year 2014-15

S.#	BHU	Total OPD Patients	Male (%)	Female (%)
01	PindNoshari	10258	3731(36.37)	6527 (63.63%)
02	UsmanKhatter	21879	5089 (23.26%)	16790 (76.74%)
03	Lab Thathu	13994	2993 (19.25%)	11301 (80.75%)

Table No.03 Showing OPD Patients of three BHUs of UC Taxila with gender for the year 2015-16.

S.#	BHU	Total OPD Patients	Male (%)	Female (%)
01	PindNoshari	12366	4082 (33%)	8284 (67%)
02	UsmanKhatter	24745	5568 (22.5%)	19177 (77.50%)
03	Lab Thathu	19429	4865 (25.04%)	14564 (74.96%)

Table No.04 Showing OPD Patients of three BHUs of UC Taxila with gender for the year 2016-17

S.#	BHU	Total OPD Patients	Male (%)	Female (%)
01	PindNoshari	14807	5414 (36.56%)	9393 (63.44)
02	UsmanKhattar	29052	7110 (24.47%)	21742 (75.53)
03	Lab Thathu	22150	5689 (25.68%)	16461 (74.32)

(ii) Usman Khattar BHU (2014-16) (2015-16) and (2016-17)

The number of male and female patients who sought health care services in BHU- UsmanKhattar during 2014-15 were 5089 (23.26%) and 16790 (76.74%) out of a total OPD patients of 21879. The number of male and female patients for 2015-16 were 5568 (22.5%) and 19177 (77.50%) out of a total of 24745 while the number of Males (M) AND Females (F) were 7110 (24.47%) and 21742 (75.53%) out of a total of 29052 for the period 2016-17 respectively presented in tables No. 02,03 and 04.

(iii) OPD Patients of BHU Lab Thathu for the years (2014-15) (2015-16) and (2016-17)

Simultaneously, The male and female patients of BHU Lab. Thathu for the year 2014-15 were 2993 (19.25%) and 11301 (80.75%) out of total OPD patients numbering 13994, while these figers for Male and Females patients was 486 (25.04%) and 14564 (74.96%) out of 19429 for the period 2015-16. The figers of Male and Female patients of Lab. Thathu BHU OPD Patients

were 5689 (25.68) and 16461 (74.32%) out of the total recorded patients as 22150, duly tabulated in the tables No, 02, 03 and 04 respectively.

(iv) Cumulative Scenario of the OPD Patients in the study area

The mean values of the overall OPD patients of the three BHU of the respective villages (PindNoshari, UsmanKhattar and Lab Thathu) for males was 5408.66 and females was 16492.66 of a total health seekers of 22034.66 while out the cumulative percentage of Male was 24.55% and Female 75.45% out of the total patients as 66104 (max:of 8445 of BHU UsmanKhattar and min: of 3597 Lab. Thathu BHU and the female total health services sought by OPD Patients of the study area were 49478 (with max: 19500 Lab Thathu and with min: 13166, PindNoshari BHU, respectively for the year 2017-18 as displayed in table No-05.

Table No.05 Showing OPD Patients of three BHUs of UC Taxila with gender for the year 2017-18. (Upto March 2018).

S.#	BHU	Total OPD Patients	Male (%)	Female (%)
1	PindNoshari	17710	4144 (23.40%)	13566 (76.6%)
2	UsmanKhatter	25297	8485 (33.54%)	16812 (66.46%)
3	Lab Thathu	23097	3597 (15.57%)	19500 (84.43%)
	Grand Total	**66104**	**16226=24.55%**	**49878=75.45%**

(v) The Percentage increase/decrease picture of OPD patients of the study area

When compared, through Correlations there was an increase of 9.41% during 2015-16 over previous year (2014-15) and the increase observed in 2016-17 was 36.63 over the previous year 2015-16 in Pind Noshari BHU as for male patients were concerned. In the same comparison the increase was recorded by 9.43% and 27.67% during 2015-16 and 2016-17 with corresponding previous years in male OPD Patients of UsmanThathu BUH while the Lab: Thathu male patients appeared with increased by 62.55% and 16.74% during 2015-16 and 2016-17 respectively, as detailed in table No.06.

Table No.06 showing OPD Male and Female Patients of three BHUs of Tehsil Taxila for the study period, District Rawalpindi (% Increase(+) or Decrease(-))

S.#	BHU	Total Males	2014-15	2015-16	2016-17
			Males		
01	PindNoshari	17371	3731	4082 (9.41%)	5414 (32.63%)
02	UsmanKhatter	26253	5089	5569(9.43%)	7110 (27.67%)
03	Lab Thathu	17144	2993	4865 (62.55%)	5689 (16.94%)
			Females		
01	PindNoshari	37370	6527	8282 (26.92%)	9393 (13.39%)
02	UsmanKhatter	74721	16790	19177 (14.22%)	21942 (14.42%)
03	Lab Thathu	61826	11301	14564 (28.87%)	16461 (13.03%)

The female patients showed increase of 26.92% (in 2015-16) and 13.39% (in 2016-17) in PindNoshari BHU when compared with the previous years. The

UsmanKhattar BHU Patients (Females) showed increase of 14.22% and 14.22% and 14.42% in the year 2015-16 and 2016-17 over the corresponding periods of previous years while female patients showed increases of 28.87% and 13.03% of the previous years as detailed in table No.06. These values based on statistical analysis are available in tables No.07 and 08

Table No.07 overall status of OPD Patients in Three BHUs of UC Taxila during the study period.

S.#	BHU	Sex	Total Count of OPD Patients		
			2014-15	2015-16	2016-17
01	PindNoshari	M	3731	4082	5414
		F	6527	8284	9393
02	UsmanKhatter	M	5089	5569	7110
		F	16790	19177	21942
03	Lab Thathu	M	2993	4865	5689
		F	11301	14564	14461
	Mean (M)	Total Males	11813	14516	18213
	Mean (F)	Total Females	34618	42025	45796
	G/Total		**46431**	**56541**	**64009**

Table No.08 Maternity Cases/Deliveries and Infant Mortality in the three BHUs of Tehsil Taxila for the year 2014-15.

S.#	Villages/ BHUs	Total Cases (Females)	Deliveries/Birth			Infantile Mortality		Death Mothers
			Total	Male	Female	Male	Female	
01	Pind Noshery	6527 (63.63%)	20	08	12	Nil	Nil	Nil
02	Lab Thathoo	16790 (76.74%)	69	42	27	Nil		Nil
03	Usman Khattack	11301 (80.75%)	217	110	107	04	03	Nil

(vi) The Response of Female Patients for Maternity Cases

The response of Female Patients for Delivery cases was significantly increases (P value 0.002) was significantly 0.001 with Four Visits Post-Natal Care of both the mothers and infants it was recorded as 80% in 2014-15, 84% in 2015-16 and 86% in 2016-17 in almost all the three BHUs of Tehsil Taxila.

(a) The results of Matenitity cases of PindNoshery

The maternity cases recorded in PindNoshery During 2014-15 was 20 cases while in the year 2015-16 102 cases were recorded whereas during 2016-17 160 cases maternity cases were recorded significantly increase 0.001 as presented in table No-08

CONCLUSION:

Based on the efforts made, supported with farmer's record, the following conclusions have been drawn: -

It was concluded based on our findings, that the establishing of Basic Health Units in Tehsil Taxila was a basic requirement of local population of 21575.33 in

habitants of this area. Both male and female patients were significantly availing heath services facilities at their door step, with increasing trends of female patients. The influx of maternity cases was slow in the year 2014-15 but it increased manifold in the year 2015-16 and 2016-17.

RECOMMENDATION:

As a result of this study findings only one recommendation is made to the effect that: -

The BHUs established in the study area, was a source of primary health services for the local inhabitants which needed to be strength and with infrastructures, on priority basis.Lab, Diagnostic facilities with X-Rays Department needed be established as additional facility.Additional staff, for running these BHUs (in three shift), was the requirement of the local inhabitants.

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EFFECT OF DIFFERENT FEEDING SYSTEMS ON GROWTH PERFORMANCE OF BALOCHI SHEEP IN DISTRICT SOHBAT PUR, BALOCHISTAN

Manzoor Ahmed[1], Shafiq Qadir Memon[2] and Muhammad Hafeez[3]

ABSTRACT

This Research work was carried out to find out the growth performance of Balochi sheep Rams (BSRms) n-12 divided into four equal groups A, B, C, and D to the feeding system of 03 hours grazing and supplementing with concentrate (Conc.) feed , for 03 months (90 days) in district Sohbat pur Balochistan, Pakistan during May-June and July 2017 were of approximately 5-6 months age and had initial mean Body Weight (B.Wt) of A= 19.50±0.05, B=17.50±0.13, C= 17.54±0.21, and D= 18.83±0.17 kgs respectively. The BSRms were sheared in March-2017 for clipping of wool, as a routine in sheep production. Body Wt gain data was collected weekly as per our research schedule for weeks-I (at day-07), II (day-15), III (day-22), IV (day-30) in first month and weeks, V (day-37) VI (day-45), VII (day-52) and VIII (day-60) in second months. The last months weekly B.Wt gain data was recorded on Weeks-IX (day-67) (day-75), X(day-75), XI (day-82) and Week XII (day 90), as per research methodology and plan of work. In the second month group A BSRms put a mean B.Wt of 3.17±0.025 in Weeks V, VI , VII and VIII while group B put on mean B.Wt of 3.26±0.02 kgs by the end of 2nd months group C showed a increase of 2.60±0.016 kgs when compared the final B.Wt of this group with previous months data. In the last month (3rd month) of this study group A, B, and C recorded a mean increase of 3.52±0.017, 3.24±0.016 and 03±0.016 kgs respectively. It was concluded the sheep rams put on feeding system supplemented with economical feed concentrate gave better results.

Key words: Feeding System, Balochi sheep, Growth Performance Balochistan

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INTRODUCTION:

An important sector of the agricultural country, like Pakistan, is Livestock which contributed 56.3% to the agriculture value added and 11.8% to the national GDP in the year 2014-15. This sector has shown an increase of 4.12% growth in the recent year as detailed in Pak. Economic Survey Report by (EjazWasti-(2014-15).

Sheep and goat population together constituted 97.8 millions in the year 2014-15 while in the latest year this figer was 100.1 million in the year 2015-16, out of which sheep were recorded as 29.4 and 29.8 millions with goat population of 68.4 and 70.3 millions in these years Both sheep and goats produced 6,71,000 tons (0.67 million tons) mutton in the year 2014-15 and recently the production of mutton recorded, in the year 2015-16 was 0.68 million tons.

Sheep as a whole, in the country, have reported a sustained growth rate of 3.5-3.7% in the recent years while upto four percent (04%) was estimated and was recorded in the year 2015-16. We need mutton of sheep and goats for our future requirements, as 40.21 million sheep are pre-emptively estimated number in the year 2020, in the light of our country's human population boom, estimated to reach 223.224 millions, documented by National Institute of Population Studies (NIPS), Planning and

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Development Ministry (P&D), Government of Pakistan (2015-16), duly presented by Muhammad Hafeez and Mashook Ali (2013). Sheep, specially Balochi sheep, are widely spread in the province of Balochistan with prominent home tract being Quetta, Sibi, Kalat, Mekran, Chagain and Kharan districts.

Balochi sheep are being raised for (i) Mutton Production, and (ii) for Wool Production, (iii) skins as well as (iv) animal fat production. Although Balochi sheep have been included in the category of Course to Fine Wool (CFW). The recent information on production of wool form Balochi sheep was 2.1 kgs -2 3 per head on an average when compared with Bibrik (1.8 kgs), Harnai (1.8kgs) and Rakshani (1.3kgs) respectively as documented by Munir*et al* (2010) The consumption of Balochi sheep wool in Kovok and Asghara vallies in Balochistan were reported as 28% and 34% while its marketing was 72% and 66% in the two vallies.

The main objective in mind to carry out this study were (i) To determine growth performance of Balochi ram-lambs with roughage and concentrate rations and (ii) To find out the body weight gain of ram-lambs fed three different quantities of feed up to 90 days. To find out the cost-effective ration for finishing ram-lambs of Balochi breed in this study.

REVIEW OF LITERATURE:

Sajid Ali Khosa *et al.,* (2010) carried out feed trial on 24 Balochi lambs, for 14 Weeks period, with an average age of around 6 months weighing 15-24 kgs. In Group-A, 12 lambs were kept on conventional (green fodders: sorghum, barley and/or Barseem and Group-B 12 lambs were feed commercial feed (concentrate mixture), in Sindh Agriculture University (SAU), Tandojam, Pakistan. Body Wt gain. Weekly with feed consumed and feed conversion ratio were the parameters of the study. Total feed intake for the overall 14 Weeks in Group-A was 91.47 kgs which resulted in a weight grain of 7.34 kgs with 12.45 FCR while in Group-B, total feed consumed was 76.05 kgs gaining 17.06 kgs, B.Wt with 4.38 FCR. Balochi lambs responded well to commercial Conc. Feed, as they observed and recommended that commercial feed is better to achieve high profits, Based on their study they found that Balochi sheep lambs of Group-B earned Rs 510/- per sheep lambs while Group-B lambs earned 108/- each.

Nagireddy *et.al.,* (2000) carried out a study on "Growth performance and carcass characteristics (of growing ram lambs fed Sweet Sorghum-Bagasse (SSB) based complete ration varying in roughage to concentrate ratios and used 24 growing Nellore Deccani ram lambs aged about 05 months, with average body weight (Av.B.wt) of 16.62+0.25 kgs and were allotted to four Complete Rations (CR), varing in roughase

to concentrate ratios viz. 60:40 in group CR-I, 50.50, in group CR-II, 40:60 in group No. CR-III and 30:70 in group CR-IV for a period of 180 days (six months). It was found that daily wt. gain on average was 77.31±4.90 gms, 81.76±5.16gms, 85.83±2.83 gms and 86.30±3.25 gms in the CR-I, C-II, CR-III and CR-IV respectively. The data on dressing percentage and cost per kgm gain has also been discussed with the recommendation of SSB can be included upto 60% level n complete ration for economical mutton production.

Nasrullah *et al.,* (2013) carried out a study on "Performance of beetal goats under different feeding management systems involving a total of 45 beetal goats approximately 15 months of age and with av.20 kgms B.Wt. divided into three groups, of 15 animals each were subjected to (i) grazing lucerne for 8 hours/per day, (extensive), (ii) grazed Lucerne for 4 hours per day and pen-fed Lucerne for additional 4 hours (semi extensive) and (iii) pen-fed Lucerne 8 hours per day (intensive). A feed intake and B Weight gain of animals were monitored every three (03) months Crude Protein (CP) intake was 127.92 gms/day. It was concluded that extensive grazing of animals on Lucerne would result in the cheapest and most effective system, to raise goats in our region.

MATERIAL AND METHODS:

The Research work was carried out the work of feeding trails in Balochi Sheep Ram-lambs (BSRms) with the average age of 6-7 months, purchased from local market district. This research work was done in one of the registered farmers sheds (Balochi sheep breeder farmers) in district. Sohbat-pur and subjected to three (03) different quantity of feed devised by the support of animal Nutrition teachers and our Research Supervision based on the feed formulation. The study lasted for 03 months (90 days) All the experimental BSRms were openly grazed for 03 hours in the morning only. Group A sheep (n-03) were given 500 gms of conc: feed while Group-C were provided 400 gms of conc feed while Group-C were given 300 gms of conc:feed but Group-D control group was not fed any Conc, feed. Grazing 3 hours/daily with all the experimental animals In addition all the experimental sheep Ram were provided green fodder were provided with 2 kg daily (intensive) in the shed as stall feeding adequate animal health coverage was provided, as a routine.

RESULTS:

1. The Balochi Sheep Rams (BSRms), (N-12) of group A,B,C and D responded positively to the concentrate (Conc.) feed and grazing system for 90 days, fed 500 gms, 400 gms, and 300 gms, each to group A, B and C respectively while group-D was on grazing only.

2. The feed formula was deliciously, liked by the BSRms, of all the three groups of our study, A, B, C were provided Conc feed, as per our research Methodology, did not show any adverse affect, during the whole period of our study.
3. The Conc. feed was provided in the afternoon, before sun-set, and was observed fully consumed. No left-overs, in the feeding tubs, were observed neat and clean water was regularly provided to these BSRms, twice daily.
4. Body Weight (B.Wt) gain observation for (First Month) Weekly and Monthly, B.Wt gain recorded in detailed as under:-

A. Group-A (B.Wt gain) observations:

The mean B.Wt of group-A BSRms was recorded as 19.50±0.05 kgs (initial) and 20.13±0.05kgs, 20.80±0.06 kgs, 21.60±0.05, and 22.33±0.046 kgs for Weeks I,II,III and IV respectively. Cumulative this group (G-A), attained 02.73±0.025 kgs in first month of our study, as shown in table No-01.

Table No-01 showing Body Weight gain (kgs) of Balochi sheep Rams in First 30 days feed Conc feed, in Sohbatpur, Balochistan-2017.

S.#	Group	BSRm ID	Initial B.Wt	D=07	D=15	D=22	D=30	Final B.Wt gain
		01	18.50	19.10	19.80	20.50	21.20	02.73
	A	02	19.60	20.20	20.90	21.70	22.30	02.83
01		03	20.40	21.10	21.80	22.60	23.33	02.91
		Mean	**19.50**	**20.13**	**20.80**	**21.60**	**22.33**	**02.83**
		S.E	**0.05**	**0.08**	**0.05**	**0.05**	**0.04**	**0.025**
		01	17.60	18.20	18.90	19.60	20.33	02.73
	B	02	18.40	19.00	19.60	20.40	21.20	02.84
02		03	16.60	17.10	17.80	18.60	19.33	02.76
		Mean	**17.50**	**18.10**	**18.76**	**19.50**	**20.20**	**02.70**
		S.E	**0.13**	**0.16**	**0.12**	**0.08**	**0.13**	**0.02**
		01	17.50	18.00	18.50	19.00	19.60	02.14
	C	02	15.60	16.20	16.90	17.50	18.00	02.46
03		03	19.50	20.10	20.8	21.50	22.00	02.54
		Mean	**17.54**	**18.16**	**18.73**	**19.33**	**19.86**	**2.33**
		S.E	**0.21**	**0.34**	**0.17**	**0.34**	**0.21**	**0.021**
		01	20.50	21.00	21.5	22.00	22.20	1.70
	D	02	18.50	19.00	19.4	20.00	20.50	1.50
04		03	17.50	18.00	18.5	19.00	19.50	2.00
		Mean	**18.83**	**19.33**	**19.8**	**20.33**	**20.73**	**1.73**
		S.E	**0.17**	**0.08**	**0.24**	**0.18**	**0.21**	**0.034**

B. Group-B (B.Wt. gain) Observations:

The group of BSRms showed a mean B.Wt of 17.50±0.13 (initial) while 18.10±0.16, 18.76±0.12, 19.50±0.08 and 20.20±0.13kgs in weeks I,II,III and IV respectively.

C. Group-C (B.Wt gain) Observations

This group of BSRms showed mean B.Wt gain of 18.16±0.34, 18.73±0.17, 19.33±0.34, and 19.86±0.26 kgs for week I, II ,III, and IV and cumulative put on a mean B.Wt of 2.33±0.021 kgs respectively (Table-No-01)

D. Group-D (B.Wt) gain Observations:

This group was not offered any quantity of Conc. Feed hence showed a B.Wt gain, only on grazing, to the tune of 19.33±0.08, 19.80±0.24, 20.33±0.18 and 18.83±0.17. These BSRms put on a mean cumulativeB.Wt gain of 1.73±0.034 kgs (table No-01)

V. Body Weight gain of BSRms (Second Month).

a) Group A showed a mean B.Wt gain on Days=37, (Week-V), Day=45 (Week-VI), Day=5 (Week-VII) and Day=60 (Week-VIII) as 23.14±0.24, 23.94±0.18, 24.61±0.15 and 25.51±0.134 kgs when compared with this months initial B.Wt put on by group-A was 3.17±0.008 as detailed in the table No-02.The cumulative B.Wt gain of Group-B was 3.36±0.02kgs when compared the Week-IV B.Wt of 23.54±0.18 with the initial B.Wt of 20.28±0.23 of this group, (table No-02)

b. The group-C showed mean B.Wt 22.46±0.26 kgs when compared with this group initial mean B.Wt of 19.86±0.034 and cumulatively these BSRms put on mean B.Wt f 02.60kgs±0.018

c. The Control Group-D showed a B.Wt gain by the end of second month as 23.13±0.34 kgs, when compared with the second months initial B.Wt of 20.73±0.17 kgs recorded a mean put on B.Wt of 2.40±0.025 respectively as detailed in table No-02.

Table No-02showing Body Weight gain (kgs) by Balochi sheep Rams in Second Month of the study District SohbatPur Balochistan-2017 (Day=37 Thru D=60)

S.#	Group	BSRm ID	Initial B.Wt	D=37	D=45	D=52	D=60	Final B. Wt gain
		01	21.20	22.00	22.80	23.60	24.50	3.33
01	A	02	22.50	23.30	24.10	24.40	25.30	2.80
		03	23.33	24.13	24.93	25.83	26.73	3.40
		Mean	**22.34**	**23.14**	**23.94**	**24.61**	**25.51**	**3.17**
		S.E	**0.16**	**0.24**	**0.18**	**0.15**	**0.134**	**0.0025**
		01	20.33	21.03	21.73	22.53	23.33	3.00
02	B	02	21.20	21.90	22.60	23.40	24.20	3.00
		03	19.33	21.03	21.73	22.40	23.10	3.70
		Mean	**20.28**	**21.32**	**22.02**	**22.77**	**23.54**	**3.26**
		S.E	**0.23**	**0.17**	**0.16**	**0.21**	**0.18**	**0.02**
		01	19.60	20.20	20.90	21.60	22.20	2.60
03	C	02	18.00	18.60	19.20	19.80	20.50	2.50
		03	22.00	22.60	23.30	24.00	24.70	2.70
		Mean	**19.86**	**20.46**	**21.03**	**21.80**	**22.46**	**2.60**
		S.E	**0.034**	**0.18**	**0.24**	**0.31**	**0.26**	**0.018**
		01	22.20	22.70	23.20	23.80	24.60	2.40
04	D	02	20.50	21.10	21.60	22.30	23.00	2.50
		03	19.50	20.00	20.60	21.20	21.80	2.30
		Mean	**20.73**	**21.26**	**21.80**	**22.43**	**23.13**	**2.40**
		S.E	**0.17**	**0.21**	**0.16**	**0.82**	**0.34**	**0.025**

VI Body Weight gain of BSRms (Third month)

a. This Group (G-A) showed a final B.Wt put on the 3.52±0.017 by the end of our study with a total mean B.Wt of 29.03±0.46 when compared with last months (months-03) initial B.Wt of 25.51±0.23, as detailed in the table No-03.

b. Group-BBSRms, in the last month of our study recorded as cumulative B.Wt put on mean value of 3.24±0.016 kgs. This groups last weeks (Week-XII, Day-90) mean B.Wt was 26.78±0.46 kgs when compared with the last months (month-03) initial B.Wt of 23.54±0.17 kgs.

c. The BSRms of Group-C put a mean B.Wt gain of 3.00±0.016 kgs and the final B.Wt gain was 25.46±0.86 kgs when compared with the initial B.Wt of this group as 22.46±0.64 kgs as shown in table No-03.

d. The control group-D which was not provided Conc. Feed showed final B.Wt gain of 25.70±0.87 kgs and when compared with this groups initial B.Wt mean value of 23.13±0.73kgs, these BSRms put on 2.57±0.03 kgs additional B.Wt, in 90 days, as appears in table No-03.

Table No-03 showing Body Weight gain (kgs) by Balochi sheep Rams in the third Month of feeding Conc: at District Sohbatpur, Balochistan (2017), Weeks IX Thru-XII (Day=61-90).

S.#	Group	BSRm ID	Initial B.Wt	D=67	D=75	D=82	D=90	Final B.Wt gain
		01	24.50	25.30	26.20	27.10	28.00	3.50
01	A	02	25.30	26.10	27.00	27.90	28.80	3.50
		03	26.73	27.63	28.53	29.40	30.30	3.57
		Mean	**25.51**	**26.34**	**27.24**	**28.13**	**29.03**	**3.52**
		S.E	**0.23**	**0.166**	**0.34**	**0.76**	**0.46**	**0.017**
		01	23.33	24.13	24.93	25.73	26.53	3.20
02	B	02	24.20	25.00	25.80	26.60	27.40	3.20
		03	23.10	23.90	24.70	25.50	26.40	3.30
		Mean	**23.54**	**24.34**	**25.14**	**20.94**	**26.78**	**3.24**
		S.E	**0.17**	**0.21**	**0.34**	**0.33**	**0.46**	**0.016**
		01	22.20	22.90	23.60	24.40	25.20	2.00
03	C	02	20.50	21.20	21.90	22.70	23.60	3.10
		03	24.70	25.40	26.10	26.80	27.60	3.14
		Mean	**22.46**	**23.16**	**23.87**	**24.63**	**25.46**	**3.00**
		S.E	**0.64**	**0.83**	**0.66**	**0.24**	**0.86**	**0.016**
		01	24.60	25.30	26.00	26.70	27.40	2.80
04	D	02	23.00	23.60	24.20	24.80	25.50	2.50
		03	21.80	22.40	23.00	23.60	24.20	2.40
		Mean	**23.13**	**23.76**	**24.40**	**25.03**	**25.70**	**2.57**
		S.E	**0.73**	**0.83**	**0.46**	**0.64**	**0.87**	**0.03**

VII Total Body Weight (B.Wt) gained BSRms in 90 days

The cumulative B.Wt put in the duration of or study indicated that G- A gained on additional B.Wt of 9.87 kgs, Group B 8.93 kgs, Group-C 8.38 and Group-D 6.70 kgs respectively, as presented in table No-04.

Table No-04 showing the cumulative Body Wt. (kgs) gain by BSRmsof Groups A,B, C and D in 90 Days Feeding Trial at District Sohbatpur Balochistan-2017.

S.#	Group	BSRm ID	Initial B.Wt	Month-I	Month-II	Month-III	After 90 Days	Total B.Wt
		01	18.50	2.73	3.33	3.50	9.56	28.0
01	A	02	19.60	2.83	2.80	3.50	9.13	28.7
		03	20.40	2.90	3.40	3.57	9.87	30.27
		Mean	19.50					29.01
		01	17.60	2.73	3.00	3.20	8.93	26.03
02	B	02	18.40	2.84	3.00	3.20	9.04	27.44
		03	16.50	2.76	3.70	3.30	9.76	26.26
		Mean	17.50					26.74
		01	17.50	2.14	2.60	3.00	7.74	25.24
03	B	02	15.60	2.46	2.50	3.10	8.06	23.66
		03	19.50	2.54	2.70	3.14	8.38	27.88
		Mean	17.53					25.59
		01	20.50	1.70	2.40	2.80	6.90	27.40
04	D	02	18.50	1.50	2.50	2.50	6.50	25.00
		03	17.10	2.00	2.30	2.40	6.70	24.23
		Mean	18.83					25.53

VIII The total feed consumption by group A, B and C was 135, 108 and 81kgs

while individually the BSRms consumed 45, 36 and 27 kgsof Conc. Feed in 90 days of our study, table No-05.

Table No-05 showing the total cost of Production (Rs) of Body W.t growth and feed trial of Balochi Sheep Rams (BSRm) at District SohatpurBalochistan-2017.

S.#	Group	Initial Cost	Age Months	Mean B.Wt	Conc Feed	Cost Consumed	B.Wt (F)kgs	Total Cost	Sale	Save
01	A	700/-	6-7	19.50	135	3260/-	29.0	10260	13000/-	2740/-
02	B	700/-	6-7	17.50	108	2592/-	26.76	9592	12000/-	2508/-
03	C	700/-	6-7	17.53	81	1944/-	25.59	8944	11000/-	2956/-
04	D	700/-	6-7	18.83	191	Nil	25.53	8813	1813/-	1187/-

IX Cost of Production

The cost of feed, as per our devised formula, and in accordance with the prevailing market rates of district sohbatpur, Balochistan, was Rs.28/- per kg and the cost per BSRms of group A, B and C was Rs14/-, Rs.11/- and Rs 8/- respectively. The Operation Cost (both cost of feed and labor cost) was calculated to Rs 2010/- Rs 1740/- Rs 1470/- and Rs 750/- for groups A, B, C and D respectively. Since these BSRms were purchased from the local animal market for Rs 7000/- each and were sold for Rs 11000/-, Rs 10,000/- Rs 9500/ and 8500 (on lump sun Basin) gave a net saving to the farmers Rs 1990/- in group A, Rs 1260/- in group-B, Rs 1030/- in group-C AND Rs 750/- in group-D respectively as detailed in table No-06

Table No-06 showing the Mean Age Cumulative B.Wt gained and total Quantity of feed Consumed by BSRms in the Feeding Trials at District Sohbat Pur, Balochistan-2017.

S.#	Group	Age-I month	Feed Consumed	Initial B.Wt	Wt gained kgs	Age-II Month	Final B.Wt
01	A	6-7	135 (45) kgs Individually	19.5	9.50	9-10	29.00
02	B	5-6	108 (36) kgs Individually	17.5	9.26	8-9	26.76
03	C	5-6	81 kgsIndividually	17.53	8.06	8-9	25.59
04	D	6-7	Nil	18.83	7.00	9-19	25.53

CONCLUSION:

Based on the efforts made, supported with farmer's coordination, the following conclusions have been drawn: -

The young Balochi sheep Rams responded well to various quantities of Conc. feed formulas devised as per innovation of our supervisors. Since 100% animal health coverage was provided, no clinical or contagious disease was observed in the experimental sheep Rams. A total of 135 kgs of Conc. feed was provided to group A, 108 kgs to group B and 81 kgs to group C while individually averaged as 45 kgs, 36 kgs and 27 kgs feed was consumed by these group BSRms for 90 days without any adverse affect. Group-D (control group BSRms were without conc. feed. It was concluded that providing 500 gm and 400 grams of Conc. feed resulted in better/increased B.Wt gain.

RECOMMENDATION:

As a result of this study findings only one recommendation is made to the effect that: -

Balochi sheep lambs can be subjected to growth performance at a younger age of (5-6 months) to be grown as Rams. All the experimental sheep/goats must be provided 100% animal health care, as we did, to avoid any mishap of disease incidence.Grazing only for 03 hours daily must be supplemented with concentrated feed to get better results.

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EFFECT OF DIFFERENT FEEDING SYSTEMS ON GROWTH PERFORMANCE OF BARBERI GOATS, IN DISTRICT NASEERABAD, BALOCHISTAN

Muneer Ahmed [1] , M.Tariq Tunio[2] and Ejaz Ahmed[3]

ABSTRACT

This study was carried out to investigate Barberi goat kids n-12, of 6-7 month's average age divided into four groups having 3 goat/kids in each as A, B, C and D for Wt. gain growth performance of (Body Weight (B.Wt) gain for 03 months (90 days) at Naseerabad, Balochistan, during May, July-2017, fed concentrate (conc) feed to the tune of 500 gms, 400 gms and 300gms (to each of three) in groups A, B, and C while group D was given no Conc:feed (but remained on grazing only with all other groups. The grazing was allowed 3-4 hours in the morning only from 5-8 0r 6-9. The Barberi goat kids (true to the proto type) were acclimatized for 05 days, at the farmers shed. All the experimental goat kids were subjected to 100% animal Health coverage (AHC) comprising vaccination against (a) Enterotoxaemia, (b) Anthrax, (c) Contaglious Caprine Pleuropneumonia (CCPP) and (d) Sheep/goat Pox. The initial B.Wt mean values of groups A, B, C and D recorded were as 21.00±0.08 kgs. 20.83±0.06 kgs 19±0.06kgs and 18.00±0.26kgs while the B.Wt gained after 90 days feeding (both grazed and Conc feed) showed a body wt.gain of 8.7±0.025 kgs for group-A, group-B showed 7.66±0.18 kgs, group-C showed mean B.Wt of 6.6±0.08 kgs respectively. The operational cost (both Conc:feed and labor cost) i.e Rs 15/- 12/- and 09/- for each experimental animal and only labor cost of Rs 9/- per day amounting to Rs 2160/-, 1890/-, 1620/- and Rs 810/- was incurred on these groups upto 03 months (90 days). It was recommended that such studies be continued in various other goat Breeds and other parts of the country.

Key words: Feeding System Barberi Goats Growth Performance Balochistan

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INTRODUCTION:

The importance of Livestock in the world and specially in Pakistan is well understood. Apart from cattle and buffaloes, sheep and goat population is well documented. The recent information shows that Pakistan is fourth largest country in terms of goat population following India, China and Bangladesh. Our country is third largest in terms of goat milk production in Asia (FAO-2010). The potentials of sheep and goats are so prominent that, at least, we have 22 sheep breeds and 34 goat breeds, spread all over the country and specially 1.3 million goats are increasing per year. The goat population was recorded as 61.5 millions in 2010 while the recent status and figers of goat were 70.3 millions as per 2015-16 documents (Ejaz Wasti-2015-16), Faisal Ashfaq and M. Fatahullah (2012). The goat is called as "poor man's cow" in our remote and rural cultural areas. The name of Naseer Khan Noori, with the head quarter at Dera Murad Jamali. Out of 32 districts of Balochistan. Spread over 03,387 km^2. It had a human population of 0.249 millions, as per 2006 census while recently in 2014 it had an estimated human population of 0.5 millions Anonimous District. Counsil Naseerabad (2014-15), with animal population of 9,30,523 (0.93 millions), out of which only goat population was within the Balochistan Province, District Naseerabad was created in 1974 with 02,61,617 (0.26 millions and sheep were 1,71,245 (0.17

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millions) heads, as per Pak. Economic Survey Report (Ejaz Wasti 2014-15). As Understood, there are four goat breeds namely Khurrasani, Kajli, Kacchi and Barberi while goats from Sindh (Barberi) Sindh Desi, and Kohistani) are also raised in Balochistan. Out of these Barberi goat has been focused for this Research study. This breed has the home tract of Dadu, Sukkur, Nawab Shah and Mirpur khas District of Sindh as reported by Muhammad Hafeez (2008) and Jonejo (1996) but due to migratory nomadic agrograziers, kept on settling in Range lands of Balochistan where water and herbage was available.

The main objective of the study, with the aim (i) To determine growth performance of Barberi goats on various feeding system in District, Naseerabad, Balochistan (ii) To work out the response of young and adult Barberi goats to three different feed formulations (iii) To find out an economical and cost effective Ration, from the locally available feed ingredients and (iv) To suggest improvement in feed formulations based on our results of this study.

REVIEW OF LITERATURE:

Pirzado *et al.,* (2010) carried out a study on "Fattening of male goat kids by feeding various levels of Crude Proteins (CP) and Total Digestable Nutrients (TDN) using 12 goats of mixed breeds, with an average (AV) age of 5-6 months, divided in four equal group of A, B, C and D at Sindh Agricultural University (SAU), Tandojam goat kids were fed on various rations having 12, 14, 16 and 18% CP and 73% of TDN respectively. The study lasted for 90 days, excluding 15 days adoption or acclimatization period. The results indicated that the fattened goat kids (now bucks) responded significantly with increase in CP levels in ration. Growing kids/bucks fed 16% CP gained 10.92 kg wt in 90 days and consumed 177.19 kgms of feed with a result of 16.50. Feed Conversion Ratio (FCR) and generated net profit of Rs.1028.91 per animal. Goat kids/bucks fed containing 18% CP consumed 177-.5 kgms of feed, gained 9.84 kgms of weight, resulted 18.05 FCR and generated net profit of Rs.850.47 per animal. Kids/bucks fed on 14% CP ration consumed relatively greater quantity of feed (181.82 kgms), gained 8.94 kgms Body Weight (B.Wt) with FCR 20.21 and resulted in net profit of Rs.676.38. While the kids fed with 12% CP ration consumed maximum quantity of feed (183.32 kgms) gained lowest B.Wt (8.27 kgms) resulted poor FCR (22.14) and generated lowest profit of Rs.586.80. Hence it was concluded that the goat kids fattening will be profitable when a balanced ration containing not more than 16% CP is provided.

Sultana *et al.,* (2012) conducted feeding trial to find out the "effect of concentrate supplementation on growth, reproduction and milk yield of Black Bangal

goats" in the Department of Animal Nutrition Experiment Station, Mymen Singh Agriculture University Bangladesh, taking 16 female goats (10±0.6 months of age and 11.5±1.3 kgms live weight), divided into four groups A, B, C and D and were given 150, 200, 250 and 300 gms concentrate mixture with ad libitum (ad.lib) green grasses. Total Dry Matter intake (DMI was recorded as 333.6, 374.7, 416.3 and 456.5 gms daily in groups A, B, C and D respectively. The CP intake was 45.2, 57.0, 66.4 and 75.7 gms per day for these groups. Milk yield of these groups was significantly increased as 206.8, 233.4, 359.3 and 374.7 ml per day for groups A, B, C and D respectively. They concluded and suggested based on their findings of groups A, B, C and D of 250 gms of concentrate daily to female goats in addition to feeding of ad lib, roughages, gave better results.

Muhammad Hafeez (2008) deliberated on sheep and goats specially the goat breeds of Pakistan as good converters of roughage in to mutton.Since Barbari goat has always showed maximum body growth and being medium goat breed of the country [the adult male (bucks) might reach to 40-45 kgs while females (goats) might reach upto 30-35 kgs but this needs scientifically prepared feed supplement, in addition to grazing, within the permissible limits of TDN and CP together with mineral supplementation of DCP, Nacl and others. Such as an approach has always benefitted many researchers, progressive farmers and mutton producers of our country.

MATERIAL AND METHODS:

The study was carried out, in the available strains of Barbari breed of goats taking young male kids (6-8 month of age) grown to bucks in district Naseerabad, using our innovative feed and feeding formulation. This represented the, district population of Barberi, goats. The study was limited to 12 male Barbari kids (N=12) grown to bucks, with the initial age of 6-8 months while our study lasted for 90 days, with 03 (n=03) kids in each groups A, B, C and D (control group). The kids/male bucks were properly identified as detailed in (iii) below Weekly weight gain data was collected, for 12 weeks (90 days) statistically analyzed and presented.

RESULTS:

(a) A feed formula devised by the animal Nutrition experts, based on the Crude Protein (CP) in between 10-12% and Total Digestible Nutrients (TDN), as per animal Nutrition guidelines, for feeding sheep and goats. This comprised (i) wheat Bran (Wht.Bran)= 35%, (ii) grams crushed= 08%, (iii) wheat straw (Wht.Str) 21%, (iv) Pea foliage=18%, (v) maize crushed=10% (vi) Di-Calcium Phosphate (DCP) =02%, (vii) Mollasses=05% and (viii) Sodium chloride,

(Nacl) (Iodized) =01% being reasonably competable feed for good production as described in table No-01.

Table No-01 showing the Grouping of Experimental male kidsof Barberi goats in District Naseerabad.

Sr. #	Groups	Colurs	Kids	Feed No.1	Feed No.2	Feed/Rates No.3	Controlled
01	A	Red	03	400 gms	-	-	-
02	B	Yellow	03	-	300 gms	-	-
03	C	Green	03	-	-	200gms	-
04	D	Nil	03	Nil	Nil	Nil	Nil

(b) Feed quantity fed to experimental goat kids/bucks.

Group-A goat kids/bucks were fed 500 gms to each of three in this group, Group-B kids were fed 400 gms each while Group-C were given 300 gms each daily, for 90 days regularly. Group-D were not provided any Conc:feed, but were on roughages granzing only

(c) Daily grazing and Drinking water of experimental animals A, B, C and D.

All the 12 Barberi goat/kids/bucks were grazed daily for 3-4 hours, in the morning. The experimental goat kids/bucks were provided Neat and clean drinking water, in water tubs, twice daily.

(d) Cost of conc feed

The cost, worked out in accordance with prevailing market rates of district Naseerabad, Balochistan, in 2017 came out to Rs 30.50 per kg and the feeding of 500 grams to Group-A goat kids/bucks was Rs 15.25 each, while Group B goats/kids/bucks feed 400 gms each was Rs 12/- and Group C fed 300 gms each was Rs 9/-. The control Group-D was not provided any Conc feed. Hence for groups A, B, and C (03 goat kids/bucks) fed 1.5 kg, 1.2 kgs and 0.9 kgs, the cost was Rs 45, 36, and 27, daily respectively as presented in table,03 and No-06 respectively.

Table-No-06 the initial cost of Experimental Barberi goat/kids/ bucks(Rs) with total expenditure, Sale and Saving after 90 days.

S.#	Groups	Initial Cost	Operational Cost	Total Cost	Sale	Saving	#03
1	A	6000	2160	=8160	10000	1640/-	4896/-
2	B	6000	1840	=7990	9500	1610/-	4560/-
3	C	6000	1620	=7620	9000	1320/-	3816/-
4	D	6000	810	=6810	8000	1190/-	3570/-

1. **Animal health coverage**

All the goat kids/bucks were provided 100% animal health coverage as under:-

(a) Anthelmintic drench was given to each experimental animal of all the four groups A, B, C and D against internal parasites.

(b) Acaricidal spray with Ectophon, was done, during the acclimatization of 05 days, of goat/kids/bucks before our feeding trials against external parasites.

(c) 100% vaccination was done against the following four endemic diseases namely:

- Enterotoxaemia (ET) with Enterotoxaemia Vaccine (ETV).
- Sheep/goat Pox with sheep/goat Pox Vaccine
- Contageons Caprine Pleuro-pnumonia (CCPP) with CCPP Vaccine.
- Anthrax, with Anthrax Spore Vaccine (ASV).
- Pest De Petit Ruminants (PPR) against Rinderpest Disease.

(d) No death was recorded during the 90 days of our study

1. Body Weight (B.Wt) gain observation

(a) The intial B.Wt of Groups A, B, C, and D mean values were recorded as 21±0.08, 20.83±0.68, 19±0.06 and 18±0.06 kgs, One day before the feeding trial.

(b) B.Wt gained in 90 days

The Body Weight gained in Barberi goat kids/bucks of Group-A fed 500 gms Conc feed daily immediate after 90 days showed B.Wt gain of 8.7±0.025 kgs. The Group-B fed (400 gms conc. feed daily showed 7.66±0.18 kgs while Group-C fed 300 gms conc. feed daily for 90 days showed mean B.Wt gain of 6.6±0.08 kgs. Group-D, though was not provided any Conc feed, also showed B.Wt gain of 5.8±0.05 kgs kept on grazing alone.

(c) Average Age of goat kids, grown to Bucks(Before and After Completion of the study):

The intial age of Group A, B, C and D was 7.5±0.08, 7±0.06, 6.7 and 6-7 month which after 90 days was recorded as 10, 10, 9.70 and 9.7 month, respectively, as detailed in table No-02.

Table No.02 Feed formulation for Three groups Barberi (for) kids/ bucks, for 90 days trial, in district Naseerabad Balochistan (2016-17).

Sr.#	Feed Ingredients	Quantity	Cost Rs./kg	Total (Cost) Rs.
1	Wheat Prran @ Rs20/kg	35%	20/-	700/-
2	Gram crushed @ Rs.110/-	08	110/-	880/-
3	Wheat Straw @ Rs.15/-kg	20	15/-	300/-
4	Pea foliage (dried)	19	15/-	285/-
5	Maize @ Rs.40/-kg	10	40/-	400/-
6	DCP @ Rs.155/-kg	02	155/-	310/-
7	Mollases @ Rs.70/-kg	05	70/-	350/-
8	Nacl (Iodized) @ Rs.10/-	01	10/-	10/-
	Total	**100**	**-**	**3235/-**

2. Operational Cost

In addition to Conc: feed cost (per day, per week, per Month/30 days and per 03 month/90 days) as stated above, one goat attendant was provided Rs 3000/- PMK 9000 rupees for 03 month for feeding watering graze sheparding watering and cleaning the shed, the mangers and water troughs. This cost of Rs 9/- per goat kid/buck per day was incurred and counted as operational cost, as detailed in table No-04.

Table-No-04 showing Quantity of Conc: Feed (gms and kgs) provided to Daily,Weekly, Monthly and 90 days experimental Barberi goat kids/bucks in Naseerabad 2017 to all the three groups A,B,C and D.

S.#	Group	A	B	C	D(Control)
1	Daily(gms) each	500	400	300	Nil
2	Feed for 03 goat kids/bucks daily kgs	150	1200	9	Nil
3	Feed for 03 goat/kids/ bucks(07days)kgs	10.50	8.40	6.30	Nil
4	Feed for 03 kids for one month (4 weeks)	42.00	33.60	25.20	Nil
5	Feed for 30 days	45.00	36.00	27.00	Nil
6	Feed Provided for 03 months	126.00	100.80	75.60	Nil
7	Feed=90 days	135.00	108.0	81.0	Nil

3. Total cost of Production (feeding and Operational)

(i) Daily and Weekly cost of Production

The group cost of production was recorded for A, B, C, and D as Rs. 72/, Rs. 63/-, Rs. 54/- and 27 while weekly cost for these groups was Rs. 504/-, 441/-, 378/- and 180/- respectively.

(ii) Monthly and 03 Monthly (90 days) cost of production

The monthly cost of production (both feed and labor cost) for groups A, B, C, and D was recorded as Rs.2016/-, 1764/-, and 756/- while this cost after 03 month (90 days) was Rs.6480/- , 5670/- , 4860/- and 2430 respectively table-No-06).

The individual cost of production within the group for each goat kids/now grown-up bucks, for groups A, B, C and D was Rs 2160/-, 1890/-, 1620 and 810/- as detailed and presented in table No-06.

Table-No-06 the initial cost of Experimental Barberi goat/kids/bucks (Rs) with total expenditure, Sale and Saving after 90 days.

S.#	Groups	Initial Cost	Operational Cost	Total Cost	Sale	Saving	#03
1	A	6000	2160	=8160	10000	1640/-	4896/-
2	B	6000	1840	=7990	9500	1610/-	4560/-
3	C	6000	1620	=7620	9000	1320/-	3816/-
4	D	6000	810	=6810	8000	1190/-	3570/-

4. Sale and saving cost of goat Bucks

The experimental Barberi goat kids (now bucks after 03 Month/90 days) fed conc: feed in addition to grazing daily for 3-4 hours were initially purchased as Rs6000/- each but when incurred (ii) cost of feed and (iii)cost of labor changes went up to Rs8160/-, 7890/-, 7620/- and Rs 6810/- for group A, B, C and D respectively. It is understood that Group-D bucks were not provided conc:feed.

These Barberi Bucks were sold for apparent grown-up status and not by Body Wt (Live B.WT on hoof at any rate per kg) but on lump sum basis Amounting to Rs 10,000/-, 9500/-, 9000/- and 8000/- which gave a saving of Rs1640/-, 1610/-, 1380/-, and 1190/- each for group A, B, C and D respectively, as presented in table No-05.

Table-No-05 Operational Cost (Labor Cost) of rearing Baberi goats (Rs) kids/Bucks Naseerabad 2017.

S.#	GroupsFeed/Daily Cons(gms)	A 500	B 400	C 300	D Nil	Total (Rs)
1	Cost of One Goat/Day Labor Cost	9/-	9/-	9/-	9/-	36/-
2	Cost of 03 per Day	27/-	27/-	27/-	27/-	108/-
3	Cost Weekly (07 Days)	189/-	189/-	189/-	189/-	756/-
4	Cost Month 30 Days	756/- 810/-	756/- 810/	756/- 810/	756/- 810/	3024/-
5	Labor Cost for 90 Days	2268/-	2268/-	2268/-	2268/-	9720
6	Total	2268	2268	2268	2268	9072

Source: Thesis data of Muneer Ahmed MSc (Hons) LM, AIOU Islamabad (Work Done in Naseerabad 2017 Balochistan

CONCLUSION:

Based on the efforts made, supported with farmer's coordination, the following conclusions have been drawn: -

Barberi goat kids, aged 6-7 month, responded well to our concentrate feed, without any adverse effects of dietetic errors or clinical diseases syndromes etc. Kids with an average age of 6-7 months fed 500 gms, 400 gms and 300 gms to group A, B, and C goats (with 03 goat of in each group) showed growth performance of B.Wt of 7.5 kgs, 7-8 kgs and 6.6 kgs per group in 90 days was a positive approach and convenient utililization of the feed evidenced. The control group-D goat kids not fed any concentrate feed but remained only on grazing also showed B.Wt growth of 5.8 kgs per group of 03 goat kids in 90 days. Our feed formula of (i) Wheat bran (35%), (ii) grains crushed (08%), (iii) Maize (10%), (iv) wheat straw (15%), (v) Pea foliage (18%), (vi) Mollasses (05%), (viii) Sodium Chloride (Nacl-01%) and (ix) Dicalucium Phosphate (02%) proved to be a competant feed, and appeared as suitable feed for growing kids.

RECOMMENDATION:

As a result of this study findings only one recommendation is made to the effect that: -

Feed in young goat kids to produce grown bucks can conveniently be started at the age of 6-7 months. A minimum feeding trial duration, easily manageable is 90 days (03 months). If goat kids of 6-7 months show 7-8 kgs of additional Bogy Weight (B.Wt), in 90 days, these must be subjected to another additional feeding, as finishing diet, to prepare fully grown up bucks.

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STUDY OF RISK FACTORS ASSOCIATED WITH HEPATITIS IN DISTRICT BHAKKAR

Saira Ramzan[1] , Aima Irum Batool[2] and Muhammad Hafeez[3]

ABSTRACT

This Study was aimed to achieve maximum of its objectives in finding out the prevalence of hepatitis in human beings both male and females, with major focus on the involvement of risk factors. A total of 485 cases were recorded in this study in four tehsils namely (a) Bhakkar, (b) Mankera, (c) Darya Khan and (d) Kaloor Kot, of district Bhakkar. A larger number of 260 hepatitis cases were recorded in tehsil Bhakkar followed by a less larger number of 169 hepatitis from tehsil Darya Khan. A lesser number of 35 hepatitis cases were recorded from tehsil Mankera and only 21 hepatitis cases from Kaloor Kot. A major portion of risk factors found out were (i) due to contaminated syringes 299 cases, followed by 72 hepatitis cases (ii) due to the risk factor of dental surgery 63 hepatitis cases (iii) due to the risk factors of Barber shops Ear and Nose piercing. A lesser number of 25 hepatitis cases were recorded (iv) due to the risk factors of use of nail cutter, Tooth brush and razor in a family while due to the risk factor of blood transfusion 15 cases and only 11 cases of hepatitis were recorded due to the risk factor of mother to child. The data collected was subjected to statistical analysis and the significance was found at the probability level of P 0.015 and P 0.035. It was concluded that since hepatitis being a viral disease equally spread male and females human patients, the risk factors needed attention of all inhabitants to given awareness specially to the health department and dental surgery personnel for adopting strict hygienic measures. It was suggestively recommended that every time sterilized, new syringes and dental equipment be used in sterilized conditions as well as all Barber shops and Beauty Parlors including Ears and Nose piercing personnel be given awareness, to use sterilized equipment, to avoid spread of Hepatitis in the country.

Key words: Hepatitis Risk Factors district Bhakkar Punjab Pakistan

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INTRODUCTION:

Hepatitis is an infectious disease of liver with the main symptoms of digestive problems (as appear in Live Function Tests (LFT) laboratory diagnosis results and jaundice, followed by Chronic Liver Disease (CLD). As per information, reported by World Health Organization report (WHO)-2016. Nearly 1.4 million deaths occur due to hepatitis as well as an estimated number of hepatitis cases in the world reported were 57% categorized as Cirrhosis of Liver (CL) together with 78% of Primary Liver Cancer (PLC) resulted from hepatitis infections, in the second report of WHO (2015).

Pakistan since a developing country, has been ranked as 134th out of 174 countries, in which hepatitis has been reported. There had been exception of such diseases including hepatitis and thus has diverted the attention of medical personnel as well as researchers in biology to start investigative study in finding the real picture of spread of hepatitis, including its risk factors involved. The main objective of the study (i)To find out the actual incidence/prevalence of hepatitis in human beings, in district Bhakkar (ii) To find out the actual magnitude of the problems of hepatitis, acrossgender, in Bhakkar district.

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REVIEW OF LITERATURE

Purusotam Raj Shedain (2017) in their comprehensive study of prevalence and risk factors of Hepatitis infection among children from infected mother, in upper Dolpa, Nepal. Hepatitis B Virus (HBV) infection was a worldwide public health problem. While in Nepal, the prevalence of HBV was found to be low (0.9%), although high prevalence (≥8%) of HBV infection was depicted among subgroup/population, in the mountain region by various studies, the Cross sectional study survey was conducted between June and July 2014 and found that mothers and their youngest child under, 5 years old, living with positive mothers were 17% (95% CI,11.01–22.99%) and 48% (95% CI, 28.42–67.58%) respectively. The majority of HBV infected mothers were indigenous (84%) followed by Dalit (4%) and other castes (12%). Finally it was concluded that among HBV infected mothers, 40% were hepatitis B envelope antigen (HBeAg) positive. Thirty-six (36%) percent of children were vaccinated with a full course of the hepatitis B vaccine. It was also concluded that 56% were HBsAgsero-positive. The HBV infection rate was high among mothers and children living with HBsAg positive mothers in the indigenous population of the most remote mountain community of Nepal.

Chieko Matsubara *et al.,* (2017) cross examined the study prevalence and risk factors of Needle Stick and Sharp Injury (NSI) among tertiary hospital workers in Vientiane, Lao PDR. They analyzed NSIs occur in developing countries however, no epidemiological study on NSIs was publicly available in Lao PDR. It was found that NSIs among nurses also included adequate availability of needles, syringes, and sharp equipment (p = 0.042; odds ratio or (0.47) and attendance were given awareness to educational or refresher courses on safety regarded NSIs (p = 0.038; or, 0.50). As an on-site practice while single-handed recapping was prevalent (46.7%, 257/550) among participants. It was found that high rates of NSIs persisted among Health Care Workers (HCWs), comprehensive health and injection safety programs was recommended for HCWs involved in clinical practice.

Imran Naeem Abbasi *et al.,* (2014) summarized their study on Prevalence of hepatitis infection among barbers with knowledge, Attitude and Practices (KAPs) in the district of Sukkar, Sindh Several occupations in developing countries laged behind in ensuring the safety of their workers, in their settings. Lack of implementation of safety guidelines at workplaces could expose workers to health risks. In Pakistan, barbers were one of the un-regulated occupational groups. Low literacy, increased frequency of direct skin contact and blade/razors used could expose barbers to body fluids including blood of the customers was to determine hepatitis prevalence among barbers and their

knowledge, attitude and practices in a peri-urban area. It was found that the prevalence of Hepatitis Virus among barbers was 2.1%. The barbers' knowledge on HBV and its transmission routes was poor. Finally they concluded thatthe prevalence of Hepatitis among barbers was lower as compared to the available national figures for the prevalence among the general population.

James Fung *et al.,* (2014)) forward a detailed account of management of chronic hepatitis B in severe liver disease (In the past few decades, Chronic Hepatitis B (CHB) evolved from a disease that was untreatable and progressive, to one that could be easily controlled with antiviral therapy. They analyzed with established cirrhosis, antiviral therapy which should be considered for all, as unpredictable form can still occur, which could be fatal for those with advanced chronic liver disease. They found that short term prognosis of the patients was dependent on both the severity of flare and underlying pre-existing causes as risk factors of liver disease. It was concluded that decompensated cirrhosis, liver failure was secondary to severe hepatitis.

MATERIAL AND METHODS:

Since district Bhakkar falls in Punjab Province having a total population of 1.65 million was a target study area towards finding risk factors involved in hepatitis in human beings. The male population (M), as per recent population figers was 0.884 millions whereas the females National population was 0.806 millions, used for gender issue as documented by the population Census Organization, GOP 2017. Four tehsils of district Bhakkar, being the investigative area for hepatitis in which the registered hepatitis patients of tehsil Bhakkar were 260 (n_1=260), tehsil Mankera (n_2=35), Tehsils Darya Khan (n_3=169) and tehsil KaloorKot (n4=21) over the the total spread of 485 human patients of hepatitis (N=485), for the study of risk factors. Each patients, across gender was interviewed, with confidently.

RESULTS:

4.1.1 The Prevalence of Hepatitis

The following incidence/prevalence in district Bhakkar including four tehsils based on our data analyzed from DHQ Registered Hepatitis cases was recorded in Tehsil Bhakkar, during the period of the study, w.e.f April-June Phase-I till July-September Phase-II (2016), as categorized parameter-wise, across gender:-

4.1.2 Tehsil Bhakkar Results

Out of total Registered Hepatitis patients in district Bhakkar (N=485), the prevalence was recorded as (n1=260) with Males (M) as 148 (56.92%) and Females (F) as 112 (43.08%). The parameters wise split of the incidence was recorded through

contaminated syringes in 161 cases (61.92%), while 39 cases (15%) were evidenced through dental surgeries. Only 05 cases pertained (1.92) to be from mothers to children while 34 cases (13.8%) were attributed to Barber shops and ear nose piercing by the quacks. There was evidence of 08 cases (3.08%) as have been transmitted thru transfusion of Blood whereas 13 cases (05%) were recorded through use of same nail cutter, tooth brush and shaving razor in the family presented in table No-01 and 02.

Table No-01 The Prevalence of Hepatitis in 04 Tehsils of Bhakkar 2017

S.#	Area Name	Gender		Total Cases	By Contami-nated	Dental Surgery	From Mothers to children	Barbar Ear Nus. Piercing	Blood Transfusion	Using Nail cuter, tooth Bursh Shaving Rasor
		M	F							
01	Bhakkar	148 56.92	112 43.08	260	161 61.92	39 15	05 1.92	34 13.03	08 3.08	13 05
02	Mankera	19 54.2	16 44.75	35	22 62.86	05 14.28	01 2.85	04 11.42	01 2.86	02 5.71
03	Darya Khan	84 49.70	85 50.29	169	104 61.54	25 14.79	04 2.36	22 13.02	05 2.95	09 5.32
04	Kaloorkot	13 61.90	08 38.09	21	12 57.14	03 14.28	01 4.76	03 14.28	01 4.76	01 4.76
Total		**264 54.43**	**221 45.56**	**485**	**299 61.65**	**72 14.84**	**11 2.27**	**63 12.78**	**15 3.09**	**25 5.15**

Table No-02 The Epidemiological incidence of Hepatitis in Bhakkar across Gender

S.#	Tehsils Victims	Bhakkar	Mankera	D/Khan	K/Kot	Total Studied	%	District Incidence
01	Male (M)	148 (56.92)	19(54.28)	84 (31.8)	13(61.90)	264	54.43	0.016%
02	Female (F)	112(43.68)	16(45.72)	85(38.46)	08(36.70)	221	45.57	0.013%
03	Total	260(53.61)	35(7.22)	169(34.84)	21(4.33)	485	-	0.029%

4.1.3 Tehsil Markera Results:

A total of 35 cases (n2=35), Registered in the DHQ Hospital out of N=485 with gender ratio recorded as M=19 (54.28%) and F=16 (45.72%) in Tehsil Mankera patients, as presented in table No-01 and 02. The parameters wise split of Markera hepatitis patients recorded (i) by contaminated syringes was 22 out of 35 (62.86%) (ii) Five cases (14.28%) were evidenced through barbers shops and ear, nose piercing while (iii) 02 cases (5.72%) were recorded through the use of same nail cutter, tooth brush shaving razor in one family. Simultaneously (iv) one case each through blood transfusion (2.85%) and (v) from mother (2.85%) respectively as detailed in table No 01 and 02.

4.1.4 Hepatitis prevalence picture of tehsil Darya Khan:

A total of 169 cases were recorded being registered patients of hepatitis out of N= 485 (34.84%) with gender ratio of M=84 (31.8%) and F=85 (38.46%). Out of these 169 cases, the risk factors wise results of (i), (ii), (iii), (iv) and (v) were 104 (61.54%), 25 (17.79%), 04 (02.36%), 22(13.02%), 05 (02.96%) and 09 (5.33%) cases,

evidenced as prevalent during the period of our study shown in tables No 01 and No 02 respectively.

4.1.5 The Prevalence Results of hepatitis in teshilKaloorKot:

A total of 21 cases out of N=485 (4.33%) were recorded as Registered patients, as per DHQ record for KaloorKot and our observed data, the gender ratio split evidenced was M=13 (61.90%) and F=08 (38.09%) respectively. The parameter wise split of (i), (ii), (iii),(iv) and (v) was 12 (57.15%), 03(14.28%), 01(4.76%), 03(14.28%) and 01 (4.76%) respectively in Tehsil Mankera hepatitis spatients, as presented in table No-01 and No-02.

4.2 The Epidemiological Incidence of hepatitis in district Bhakkar:

In the epidemiological incidence, based on prevalence of total cases of Hepatitis N=485 was 0.029% over the district population of 1.65 millions with gender ratio of M=264 (0.016%) and F=221 (0.013%) respectively. This provided us an overall incidence of hepatitis, in district, Bhakkar.

4.3 The risk factors-wise prevalence of Hepatitis:

4.3.1 Prevalence through the use of Contaminated Syringes

A greater percentage of hepatitis was recorded in the district as 260 cases out of 485 followed by 161 cases out of 260 (61.54%) from Tehsil Bhakkar while 104 cases out of 169 (61.54%) from Darya Khan patients and 22 cases from Mankeraout as risk factor of contaminated syringes of 35 (62.85%) while only 12 cases out of 21cases(57.14%) as attributed to be caused, from KaloorKot area, as detailed in table No 01.

4.3.2 Prevalence through Dental Surgery

An overall prevalence of such hepatitis cases was 72 (14.84%) out of the total recorded (N-485) comprising 39 (15%) from Bhakkar, 25 (14.79%) form Darya Khan, 05 from Mankera (14.28%) and 03 out of 21 cases (14.28%) from tehsil KaloorKot respectively, as presented in table No-01.

4.3.3 Prevalence attributed to Barber shops and Ear Nose piercing

A total of 63 cases out of N-485 (12.78%) were indicating this risk facto of hepatitis with 34 (53.96%) form Bhakkar, 22 (34.92%) from Darya Khan, 04 cases (6.35) from Markere and 03 (4.76%) from KaloorKot tehsil patients respectively as detailed in table No-01.

4.3.4 Prevalence attributed through the risk factor of same nail cutter shaving razor and tooth brush.

A total of 25 cases out of N-485 (5.15%) were recorded as caused through the risk factors of same nail cutter, shaving razor and tooth brush in a family. Out of this 13 (52%) were form Bhakkar, 09 cases from Darya Khan (36%), while 02 cases (08%) form Mankeraand only one cases (04%) from KaloorKot tehsil patients respectively as can be seen in table No-01.

4.3.5 Prevalence attributed through the risk factors of Blood Transfusion:

A total of 15 cases out of 485 (3.09%) were observed under this risk factor and out of these 08 cases (53.33%) were from Bhakkar, 05 cases (33.33%) form Darya Khan while one case each (6.66%) was recorded from Mankera and KaloorKot tehsils patients respectively as detailed in table No-01.

4.3.6 Prevalence through the risk factor of from Mothers to children

Only 11 cases out of N-485 (2.27%) were recorded attributed the risk factor of mothers to children. Out of these 11 cases, 05 (45.46%) were from Bhakkar, while 04 cases (36.36%) were from Darya Khan and one case each (9.09%) was from Mankera and KaloorKot tehsil patients respectively, as detailed in the same table No-01.

4.4 Prevalence of Hepatitis across gender, based on risk factors:

Out of the total cases of hepatitis (N=485) male cases were recorded as 264 (54.43%) while female hepatitis cases were recorded 221 (45.56%) in this study of district Bhakkar. The tehsil wise results of hepatitis were recorded as under:

4.4.1Tehsil Bhakkar hepatitis across gender

In tehsil Bhakkar out of 260 hepatitis recorded showed 148 in males (56.92%) while in ladies the total number of hepatitis were 112 (43.08%) as per our record of the study, presented in table No.01.

4.4.2Tehsil Mankera hepatitis, across gender

A total of 35 hepatitis cases were recorded in tehsil Mankera with gender split of 19 males (54.28%) while 16 cases of Females were recorded in tehsil Mankera(44.75%) respectively, as presented in table No.01.

4.4.3Tehsil Darya Khan hepatitis, across gender

Out of total hepatitis cases recorded (n=169) 84 cases pertained to males (49.70%) while 85 cases belonged to ladies (50.29%) respectively in tehsil Darya Khan as detailed in table No.01.

4.4.4Tehsil KaloorKot hepatitis, across gender

Out of a total of 21 hepatitis cases 13 (61.90%) pertained to men while 08 belonged to women (38.09%) in tehsil KaloorKot respectively in this study, as detailed in table No.01.

4.6 Analysis of Variance (AVOVA) Results

The data obtained from hepatitis cases based on risk factors involved, tehsil wise, were subjected to Analysis of Variance (ANOVA) and Welch F-test were used to find out significant at probability level of P<0.01or 0.05 and it was recorded that 0.015% was the probability level of ANOVA while the Welch F-test 0.035% evidenced the significance of our results, as presented in table No.06.

Table No-06 Analysis of Varience Results (ANOVA) of Hepatitis in districtBhakkar.

Test for Equality of Means Between Series			
Date: 06/08/18 Time: 06:45			
Method	Df	Value	Probability
Anova F-test	(4, 25)	1.142358	0.015
Welch F-test*	(4, 10.1277)	3.402308	0.035
Analysis of Variance			
Source of Variation	Df	Sum of Sq.	Mean Sq.
Between	4	59043.87	14760.97
Within	25	323037.3	12921.49
Total	**29**	**382081.2**	**13175.21**

CONCLUSION:

An overall 485 cases of human hepatitis cases were recorded in DHQ Bhakkar during the period of this study from March to September 2016. The overall incidence of 0.029% was the outcome over a total population of 1.65 millions of district Bhakkar. The gender ratio of prevalence of hepatitis cases was recorded as M=148 (56.92%) and F=221 cases (45.56%) respectively, in all the four tehsils of district Bhakkar. Majority of hepatitis cases with max=260 (53.61%) were from Tehsil Bhakkar and lowest incidence min=21 cases (4.33%) were from Kaloor Kot tehsil of district Bhakkar.

RECOMMENDATION:

As a result of this study findings only one recommendation is made to the effect that: -

As the major risk factors involved in hepatitis had been the contaminated syringes in our study, it is suggested to the medical and other health Care personnel to use sterilized new syringes, every time, while injecting any medicine etc. Since the second larger risk factors involved in hepatitis was dental surgery, it is suggested to all dentists (both dental surgeons and dental technicians) to use sterilized instrument, every time, dental surgery is performed. Since the third major risk factor studied/found was

barbers shop and ear, nose piercing, it is suggestive/recommended that strict hygienic measures be adopted in all the barbers shops and all people involved in ear, nose piercing in beauty parlors, for compliance

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INVESTIGATION ON AFLATOXIN CONTAMINATION OF DAIRY MILK PRODUCED IN QUETTA DISTRICT, BALOCHISTAN

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ABSTRACT

This Research study was carried out to investigate the presence of aflatoxin M1 (AFM1) in fifty (n=50) fresh milk samples from Govt: Dairy Farm (GDF) and an additional equal number of milk samples (n=50) collected from Private Dairy Farms (PDFs) Quetta. Simultaneously 50 samples of wheat straw (W/str) and additional 50 samples of concentrate feed (cotton seed cake) for the evidence of Aflatoxin in G-1 (AFG1). Using Enzyme Linked Immun Sorbant Assay (ELISA) Technique, at Dairy Science Laboratory of Animal Sciences Institute, National Agriculture Research Centre (NARC), Islamabad. It was found that 08 samples out of fifty (16%) gave positive AFM1 readings valued 0.1 to 0. microgram Ugms/L mean value 0.35±0.017) while 35 samples did not show any reaction. A total detection and only 05 (10%) showed positive reaction, as of lower intensity. It was concluded that the ELISA techniques worked well in detecting Fresh milk samples and Feed(Sample(Cotton Seed Cake-CSC)s even after the Frozen samples for 2-3 months. It was further evidenced that although the representative samples were less in number the AFM1 detected in fresh milk and AFG1 in W/Str. It was recommended that One Laboratory, each established in all the four Veterinary Research Institutions at Quetta, Balochistan, Peshawar, Khyber Pakhtoonkhwa, Lahore, Punjab and CVDRL, Tandojam as well as at National Veterinary Laboratories (NVL) Islamabad with a policy suggestions that rules and regulations must be prepared for implementation towards Aflatoxin detection and minimizing permissible limits in milk as well as feed and fodder, must be ensured for the better safeguard of human health in our country and dairy animals heatlh.

Key words: Aflatoxin Contamination Dairy Milk Production District Quetta Balochistan

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INTRODUCTION:

An Understood Aflatoxins are the products of Fungi, specially the Aspergillus species, which contaminate milk and milk products specially yogurt, whey and cheese including powder milk. The text books and reviewed literature indicateafla-toxin contamination, specilitically Aflatoxin AFM-I and AFG-I. During the write-up of this thesis, the fresh information on population Census (2017) had been made public. The human population of District Quetta comprised for this population heads in animal feed and silages, while AFMI has been responsible for liver affections (Hepatitis, Jaundice and breast carner in ladies (mothers) and has been de-clared as carcinogenic by the International Agency for Research on Cancer (IARC) as detailed by MwanzaMulunda*et al.,* (2013) under the subject of "decade of Aflatoxin M. Surveillance in milk and dairy products in developing counties". The reviewed literature will further draw the attention as an important subject for investigation. Not only the milk (Fresh (unprocessed milk) but feed ingredients, stored for a considerable time, needs to be investigated. Aflatoxins as well as Ochratoxins namely the Aflatoxin G1 (AFG1) and/or Aflatoxins B1 (AFB1) as reportedly are produced in animal feed, speciallyconcentrate (conc) feed namely cotton seed cake, grains containing pellet feed when contaminated by fungi (As pergillus, Penecillium of Furarium species) at home

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and abroad; such as Sultana and Hamit (2009), Mawanza*et al.,* (2011), Husaain and Anwar 2008, and Sadia Jabbar (2012), Iqbal et al (2011), Maqbool *et al.,* (2009), Abdullah Zinedin (2010) from different countries.

When metabolized in animal body, specially milk production in bovines (cows and buffaloes), as well as caprines (goats) and ovines (sheep) including Dromadar i.e (camel) and Equines mare and donkeys). The Aflatoxins G1 or B1 are converted in to Aflatoxins M1 (AFM1) and secreted in fresh milk. These remain in milk, not affected by boiling or processing (pasteurizing and packing) as well as powdered milk contains such AFM1 and cause threat to human health in children, men and women alike (Joranakos*et al*., (2014).

To find out the prevalence of affatoxins in fresh dairy milk, in Quetta. To investigate the reasons of prevalent of these aflatoxin in this area. To create awareness amongst dairy farmers. To suggest the control measure of these aflatoxins.

REVIEW OF LITERATURE:

Pathirana*et al.,* (2010) carried out a study to determine levels of Aflatoxin M (AFM), metabolites of Aflatoxin B1 in raw cow milk, in high milk producing area in Sri-Lanka. AFM, levels were investigated by High Performance Liquid Chromatography (HPLC) equipped with a fluorescence detector, monitoring at wave length of 365nm and 425nm for excitation and emission. Eighty seven samples of raw milk were randomly selected from dairies in seven provinces in the country and analyzed for AFM, using the official methods of analysis of Association of Official Analytical Chemists (AOAC), the percentage recovery of AFM was 85.2±4.03 with respect to an artificially contaminated concentration of 48.6 ngms /liter, AFM, was detected in 33% of locally manufactured raw milk samples in concentration ranging from 13.1 ngms/liter to 84.5 ngms/liter with a mean level of 40.2 ngms/liter. Results suggest a need to introduce safety measures for AFM detection.

Suliman and Abdullah (2013) conducted a study to detect aflatoxinM1 in dairy cattle milk in Khartoom, State, Sudan in a total of 143 samples (randomly sampled). The Enzyme Linked Immunosorbant Assay (ELISA) was used to detect aflatoxin M and found AFM, in 100% of the samples examined. Out of the total samples tested 141(98.6%) of the samples had AFM, greater than the Maximum tolerance limit (50ngm/liter) which appeared to be serious public health problem for the people of Khartoom state which might create a problem, as they concluded and recommended to create awareness conveyed to producers handlers and specialists

MATERIAL AND METHODS:

The study was carried out both (i) Government in dairy farms of cows in Quetta district and (ii) Private Dairy Farms (PDF) Cows. Although there was a population of

cattle in Balochistan Province as per 2016-17 estimated Population. The number of milch cows were very close to 0.21 millions, and was taken as the total population. While Random samples representing, the population was subjected to our investigation. A total of 50 fresh milk samples (N-50) (25 from cows of Government Dairy Farm (GDF) Quetta and 50 from periferee of Quetta District (05 samples each from organized private farms) were collected.An additional 50 samples of cattle feed from (i) wheat straw (wt/st) 25 and (ii) Concentrate Feed (conc.Fd) 25 kept and stored for the complete season.The collected samples were properly identified. ID Nos. marked on the cellophane bags for feeds (F) 001-025 F, 026-050 (Ws) as well as The milk samples, collected were also be properly identified. ID. Nos allotted on the test tubes/plastic screw caped bottles of 20+25 ml capacity, as 051-075 (GFM) and 076-100 (PFM) as government farm milk (GFM) and private farm milk (PFM) respectively.

RESULTS:

a. Milk Samples of Cows from GDF, Quetta:

Five samples (10%) were observed with ELISA readings range of 0.006-0.001 ugms/L while fourteen sample (28%) were detected with values ranged 0.04 to (mean value (0.03) (12%) showed values of 0.16 to 0.18 ugms/L. Out of 50 samples, 08 (16%) showed values ranging from 0.1 to 0.8 (mean=0.35±0.017). Sixteen samples out the total milk samples for GDF (32%) did not show any fluorescence and were negative for AFM. Two samples showed values of 1.3 and 2.6 ugms/L (AV=1.95) as presented in table No-01 and 02.

Table No-1 Showing the GDF Quetta Milk Samples Result Subjected to ELISA as detected AFM through HPLC (96 Wells plat)-2016-17

S.#	In Ugms/L					
	007	**008**	**009**	**010**	**011**	**012**
01	0.85	0.76	0.00	0.00	0.001	0.02
02	**019**	**020**	**021**	**022**	**023**	**024**
	0.36	0.06	0.01	0.00	0.00	0.17
03	**031**	**032**	**033**	**034**	**035**	**036**
	0.66	0.74	0.02	0.16	0.00	0.00
04	**043**	**044**	**045**	**046**	**040**	**048**
	0.37	0.00	0.08	0.18	0.25	0.066

Table No-2 Showing the GDF Quetta Milk Samples Results Subjected to ELISA as detected AFM through HPLC (96 Wells plate)-2016.

S.#	HPLC FLUORESCENCE LEVEL					
	001	**002**	**003**	**004**	**005**	**006**
01	0.00	0.08	0.07	0.00	0.56	0.16
02	**013**	**014**	**015**	**016**	**017**	**018**
	0.05	1.30	2.6	0.018	0.88	0.006
03	**025**	**026**	**027**	**028**	**029**	**030**
	0.00	0.13	0.45	0.06	0.39	0.00
04	**037**	**038**	**039**	**040**	**041**	**042**
	0.00	0.06	0.01	0.00	0.03	0.06
05	**049**	**050**				
	0.00	0.00				

b. Milk Samples of Cows from Private Dairy Farms Quetta:

A total of 50 milk samples for cows of Private Dairy Farms (PDFs), Quetta when subjected to ELISA test, 20 samples (40%) were found negative. These samples did not show any fluorescence in the detector. A total of 24 samples showed positive reaction ranging from 0.01 (min.) to 0.06 (max.) with mean value of (0.012±0.003) while four samples (08%) showed values of 0.16 (min.) and 0.86 (max.) with mean value of 0.447±0.0176. Two samples (04%) were observed with AFM readings of 1.66 and 1.86 (AV=1.75), as presented in table-No 02 and 04.

Table No-4 Showing the PDF Quetta Milk Samples Results Subjected to ELISA as detected AFM through HPLC -2016-17

S.#	In Ugms/L					
01	**57**	**58**	**59**	**60**	**61**	**62**
	0.08	0.00	0,00	0.166	0.08	0.006
02	**69**	**70**	**71**	**72**	**73**	**74**
	0.00	0.016	0.00	0.00	0.031	0.031
03	**81**	**82**	**83**	**84**	**85**	**86**
	1.86	0.00	0.00	0.00	0.56	0.86
04	**93**	**94**	**95**	**96**	**97**	**98**
	0.00	0.00	0.00	0.031	0.04	0.06

c. Dry Fodder (Wheat straw test results for AFG:

Dry fodder, the wheat straw, 50 samples, collected, presented and examined through ELISA revealed that only 05 (10%) showed positive reaction. Out of these 03 samples (6%) reacted with mild evidence readings of 0.001, 0.003 and 0.0015 (Mean=0.0015) and two (4%) samples showed AFG readings of 0.01 and 0.016 (AV=0.013) while 45 samples, out of 50 (90%), did not show any reaction in the ELISA detector. The results of AFG for WS are detailed in table No-05 and 06.

Table No-5 Showing the AFG detected from Wheat Bhoosa (WB) Samples Subjected to ELISA (taken from feed Stores Quetta -2016-17

S.No	0,00	0,00	0,00	0,00	0,00	0,00
01	**01**	**02**	**03**	**04**	**05**	**06**
	0.00	0.00	0.00	0.00	0.00	0.00
02	**13**	**14**	**15**	**16**	**17**	**18**
	0.00	0.00	0.00	0.00	0.00	0.00
03	**25**	**26**	**27**	**28**	**29**	**30**
	0.00	0.00	0.00	0.00	0.00	0.00
04	**37**	**38**	**39**	**40**	**41**	**42**
	0.00	0.00	0.00	0.00	0.00	0.00
05	**49**	**50**				
	0.00	0.00				

Table No-6 Showing the AFG detected from Wheat Bhoosa (WB) Samples Subjected to ELISA (taken from feed Stores Quetta -2016-17

S.No	In Ugms/L					
	0.00	0.00	0.00	0.00	0.01	0.016
01	**07**	**08**	**09**	**10**	**11**	**12**
	0.00	0.00	0.00	0.00	0.00	0.00
02	**19**	**20**	**21**	**22**	**23**	**24**
	0.00	0.00	0.00	0.00	0.00	0.00
03	**31**	**32**	**33**	**34**	**35**	**36**
	0.00	0.00	0.00	0.00	0.00	0.00
04	**43**	**44**	**45**	**46**	**47**	**48**
	0.00	0.00	0.00	0.00	0.00	0.00

d. Concentrate feed (Cotton Seed Cake)Results of AFG:

Results of concentrate feed, cotton seed cake, out of a total of 50 samples, collected from different feed stores, when subjected to AFG detection through ELISA, showed 39 (78%) positions whereas 11 (22%) samples did not show any reaction and were negative. The positive samples were categorized as under:-

(i) Out of 39 positives, Four (10.25%) or out of 50 tested (08%) showed values which ranged from 0.16 (min.) to 0.88 (max.) with mean value of 0.66 ±0.0133 µgms/kg.

a. Nine smaples of 39 positive (23.07%) or out of total of 50 tested (18%) showed values ranging from 10.50 (min.) to 13.77 (max.) and with a mean value of 12.02±0.76.

(ii) Five (05 samples out of 39 positive (12.82%) or out of 50 tested (10%) revealed fluorescence reaction as positive for AF, the value ranged from 21.55(min.) to 24.6 (max.) with a mean value of 22.65±0.40.

(iii) 12 CF samples out of 39 positives (30.77%) or out total 50 test (24%) showed AFG values ranging from 14.55 (min.) to 18.66 (max.), with mean value of 15.68±0.92.

(iv) Two CF Samples out of 39 positives (5.13%) or out of total 50 tested (4%) samples revealed AFG values of 33.33 and 38.66 Ugms/kg (AV=35.995=36) while only two out of 39 positives or out of 50 tested were observed with AFG values of 44.66 and 48.55 AFG, the maximum values in out of 39% or overall 50 tested samples, as presented in table No-07 and 08.

Table No-7 Showing the Evidence of AFG of Cotton Seed Cake Concentrated Feed (CF) Samples Subjected to ELISA (taken from Feed Stores Quetta)-2016.

S.No	01	02	03	04	05	06
01	14.66	16.88	22.66	0.00	0.16	0.55
02	**13** 24.6	**14** 12.5	**15** 14.8	**16** 17.85	**17** 11.6	**18** 10.5
03	**25** 38.66	**26** 18.66	**27** 15.33	**28** 11.07	**29** 48.5	**30** 40.66
04	**37** 0.00	**38** 0.00	**39** 8.66	**40** 07.56	**41** 11.70	**42** 11.21
05	**49** 22.66	**50** 13.97				

Table No-8 Showing the Evidence of AFG of Cotton Seed Cake Concentrated Feed (CF) Samples Subjected to ELISA (taken from Feed Stores Quetta)-2016-17

S.No	In Ugms/kg					
01	**07** 0.81	**08** 0.02	**09** 0.00	**10** 0.00	**11** 0.88	**12** 18.55
02	**19** 18.66	**20** 0.00	**21** 14.5	**22** 13.66	**23** 18.4	**24** 16.66
03	**31** 33.63	**32** 48.4	**33** 21.77	**34** 21.5	**35** 17.70	**36** 18.66
04	**43** 0.18	**44** 8.66	**45** 0.00	**46** 0.00	**47** 0.00	**48** 0.00

CONCLUSION:

Based on the efforts made, supported with farmer's record, the following conclusions have been drawn: -

The ELISA Technique worked well in the tested samples.The technology evidenced accurate results even after the samples were kept in Freezer for few days.Wheat straw and cotton seed cake were transported form Quetta to Islamabad. The milk samples of cows From Govt Dairy Farms (GDF), Quetta evidenced very low values of Aflatoxin M1 (AFM1) detected in 10% of samples, ranging 0.006-0.001 ugm/L.Only 08 samples (16%) out of 50 showed traces of low concentration 0.8 Ugm/L in GDF cows milk samples.Only 02 samples (04%) showed the prevalence of AFM1 in the concentrated feed which was no alarming, as per Codex Alimentanious Commission (CAC).

RECOMMENDATION:

As a result of this study findings the following recommendation is made to the effect that: -

This has paved the way for conducting similar studies in Animal Sciences Institute of NARC Islamabad, samples.Since Limited quantity of ELISA regents are available NARC Islamabad, Samples to be sent to NARC must be subjected to prior confirmation of reagents etc. Aflatoxin contamination, as evident are human health importance, One Aflatoxin Testing Centre (AFTC) must be Established in each of the Veterinary Research Institute (VRI) of Quetta, Peshawar, Lahore, Central Veterinary Disease Laboratories (CVDRL), Tandojam and National Veterinary Laboratories (NVL), Islamabad.

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THE ECONOMIC ASPECTS OF FOOD INSECURITY INFLATION AND ITS IMPACT ON POVERTY IN RURAL AREA OF TEHSIL-RWP-PUNJAB

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ABSTRACT

A study was conducted to access the socio-economic aspect towards food insecurity inflation and its impact on poverty in rural areas of tehsil Rawalpindi Punjab province during the year 2017, based on semi-structured questionnaire. Out of 200, a total of 182 (N-182) respondents (91%) responded across gender (M=155)(85.16%) and F=27 (14.84%). It was found that majority of the house hold heads (hhhs) out of the fie village (a) Parjal (b) Karahi (c) Mahoota (d) Mohra and (e) Misrial contained in two UCs. The main objective of the study were (i) to find out the magnitude of food security (ii) major income sources and (iii) to evaluate distributive factor of food insecurity as cause of poverty and (iv) to assess impact of food inflation in the rural village. The information collected was splitted on (i) age of respondents (ii) status of education (iii) food items used on daily basis and (iv) monthly income with (iv) analysis of one decades food inflation (2000-01 thru 2000-10) with recent up-dates on 2015-16, 2016-17 and 2017-18. It was concluded that majority of respondents were older with monthly expenditure of Rs 8572 and above PM (61%) as below poverty line, with food insecurity of 1153% and status of education revealed 81 (44.51%) mafricalates, 50 (27.47%) , 51 (20.02%) in the five villages of the study. It was also concluded that poverty prevailed in majority of 23000 heads. It was recommended that since no higher secondary school/college existed, in these UCs (05 villages of the study area plus other villages in a radius of 30-45 km, one high school or higher secondary schools was needed to be established and a technical training centre to produce man power who will improve scoio-cultural and economic conditions of the area, in the coming year.

Key words:

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INTRODUCTION:

Punjab is the most populated province of Pakistan with population of 73,621290 (73.62 millions) as per the last census of 1998 and 105 millions as per 2016 estimates. The second largest province comprises 205345 squares KM.The area of the province of Punjab is 25.7 percent of the total area of Pakistan. The population of Punjab being the 55.6 percent of the total population of the country as per the census of 1998.The growth rate of population was estimated as 2.64. (Pakistan Bureau of statistics, Government of Pakistan, 2015). The density of population in Punjab is 358 persons per sq.km. It has five rivers, vast plain area of cultivation irrigated by canals. The Punjab's irrigation system is one of the prominent systems of the world.

In Punjab a remarkable portion of agro based area is rain fed (Barani. The major grain crops of this province are wheat, rice, cotton, maize. In the year of 2013-14 the crop areas of wheat and rice was 6901000 hectares and 1809000 hectares with production

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of 19735000 tones and 3481000 tons respectively (Pakistan Bureau of statistics Islamabad). In vegetables Punjab is producing potatoes, onion, tomatoes. Pulses like Mash, grams and other as additional agricultural production. The area and production of potato in 2013-14 were 1486 hectares and 27433 tones respectively. While for the same period the area and production of onion were 437 hectares and 3588 tons as reported by the Directorate of agriculture Crop Reporting Service, Punjab Lahore). Punjab is also

producing a sufficient amount of fruits like mangoes and oranges. In 2014 the cropped area for Citrus was 1834 hectares while for the same period in the Kharif season the cropped area for Mangoes was 1834 hectares. The agriculture production of Punjab is 24 percent of the GDP of the country (Bureau of statistics GOP, 2015) which is a remarkable portion of the income and foreign exchange's resources of the country.

In the field of livestock and poultry which are also main animal protein source of food ingredients Punjab is contributing significantly. In Punjab the number of cattles were counted 13204 thousands, number of Buffaloes were counted 16019 thousands, sheep, 4942 thousands, goats, 17392 thousands in 2010. (2010 censuses of agriculture and 2006 censuses of livestock, agricultural censuses organization, Pakistan Bureau of statistics, Govt. Of Pakistan, Lahore). Both of these sectors are not only fulfilling the requirements of food of the province but a significant amount of poultry and life stock are being exported to Gulf Countries and Afghanistan.

The main aims and objectives of the study had been To find out the magnitude of food security in the study area. To find out the major income sources in the study area province of Punjab. To evaluate the distinctive factors of food insecurity as a cause of poverty in our study area of Punjab. To assess the impact of govt. policies on food inflation and food security in the study area. To suggest means and measures for improvement of this situation.

REVIEW OF LITERATURE:

Shahid Iqbal *et.al* (2016) worked on the impact of foreign remittances on the food security. Their finding shows that the foreign remittances have a positive impact upon food security. Their analyses indicate that the expenditures of those families who are receiving the remittances are higher as compare to those families who are not receiving the remittances. The analyses also indicated that due to remittances the food consumption raised but it didn't make the balance nutritional status. In light of findings of this study there was need of well organized policies to obtain the maximum benefit from this source of income of local, in the rural communities of the study.

Mahajan (2015) investigated the farm wages and public works with the objective, how robust are the impacts of National Rural Employment Guarantee Scheme. The purpose of this paper is to examine the impact of National Rural Employment Guarantee Scheme (NREGS) on farm sector .This identification strategy rests on the assumption that all districts across India would have similar wage trends in the absence of program. This paper looks specifically at farm sector wage growth in cultivation wage post 2004.Impact of NREGS on it, accounting for state specific in shaping farm wages .Theoretical estimates are presented to overcome economic limitations and concluded that farm wasges and wages on public work must be reciprocally addressed.

Shafique Qadir Memon *et al* (2015) forwarded a detailed account of agriculture crops used for staple food in the country namely wheat, sugar cane,, maize and rice (their production, availability with its prices w.e.f. 2010, 2011, 2012, 2013, and 2014 and forecasted the future increased production of food grain crops, amidst population boon to the year 2030.. They also proposed means and measures for increased agriculture production with general recommendation.

Ejaz Wasti (2014-15) documented the poverty indices in terms of Pakistan rupees, as the poverty line, for the years 2004-05, 2005-6, 2007-8 and for the year 2010-11 as Rs. 878.64, 944.47, 1141.53 and 1745.00 respectively indicating poverty percentages of these years as 23.9percent, 22.3percent, 17.2percent and 12.4percent respectively. This was also supported by the Poverty Head Count (PHC) and the Millennium Development Goal (MDG)-1, targets of Pakistan. During 2013-14, the document reported indicated Rs. 3030/- per adult house hold, as poverty line base on Cost of Basic Needs (CBN) hence 29.5percent of the population of the country (Pakistan) stood below poverty line. The poverty line, as per cent Reports Ejaz Wasti (2015-16) for the years 2010-11, 2011-12, 2012-13, 2013-14, 2014-15 and 2015-16 was Rs. 9800/-, Rs. 10,000/-, Rs. 10,500/-, Rs. 11000/-, Rs. 12500/-, Rs. 13000/- and Rs. 13500/- respectively while the food security line (CPI based) was Rs.9000/-, Rs, 10,500/-, Rs.10700/-, Rs.11800/-, Rs.12000/-, Rs.13500/- and Rs.14000/- respectively.

Hafiz Zahid Mehmood *et al* (2014) carried out a detailed study on the impact of livestock on food security in 35 districts of Punjab province, Pakistan referring to world (Global) position, food unsecured population of South Asia and Pakistan providing data on livestock (population, milk and meat production) of three consecutive years (2009-10, 2010-11 and 2011-12) along with livestock population per acre of Agri land. They used Generalized Linear Model and link functions worked out to the significant level. The study found that Work Animals per Hectare (WAPH), Work Animals per Person

(WAPP) and Milk Animals Per Hectare (MAPH) have positive relationship with Food Secure Population (FSP), with recommendation of livestock production towards increased milk and meat, required for our increasing population, in the years to come.

MATERIAL AND METHODS:

The study was carried out in two Union Councils of District Rawalpindi namely (a) Parial and (ii) Raika Maira including five villages. Two villages i.e. Parial and Karahi from UC Parial. Three villages from UC Raika Maira i.e. Mahoota, Mohra and Misrial. . There were five villages and out of which three villages with variable number of inhabitants, the total population being as up to 30 thousands (estimated). The results socio-cultural data was collected from the selected house hold (hhhs). The parameters identified were (i) No. of hhhs in each villae (ii) age, (iii) age, (iv) Education (v) cost of food items (vi) food security (vii) food inflation and (viii) poverty line in the study area mpact of food inflation in the research based area. The data was correlated with the house hold income, food basket and food security along with food inflation worked out, in the light of Consumer Price Index (CPI) of various previous and recent ones. The data collected was subjected to proper statistical analysis using stat-Pak-2004, SAS-2006, and/or E-view-9 to find out the significance of the study at probability level of P0.001 to P0.005 employing students "T" test.

RESULTS:

I. Basic Information of Surveyed Villages.

I selected the two rural Union councils of district Rawalpindi. A total of 200 questionnaires were distributed to 50 house hold heads (hhs), in each of the five villages namely (i) Parial, (ii) Karahi, (iii) Mahoota (iv) Mohra and (v) Misrial. First two villages were from Union Council Parial and the last three were from UC Raika Maira of Tehsil& District Rawalpindi. The respondents were 182 (91percent) comprising 155 males (85.16percent) and 27 females (14.84percent) out of 42, 40, 38, 32 and 30 respectively from each of the five villages (i), (ii), (iii) and (iv), with an mean age of 58.13 years$\pm$16.86 (the range being Minimum = 50 and maximum = 75 years) as presented in table No.01.The village wise approximated population was recorded as 11000,4735,2640,2415 and 2210 totaling 23000 heads. Table 01

Table No.01 the frequency of respondents HHH, Mean values of ages of villages, frequency of gender and approximated population of Surveyed in Tehsil Rawalpindi-2017

Sr.#	Name of Village	Number of HHH	Age/Year	Male	Female	Approx. Population
01	Parial	42	50-60	33	09	11000
02	Karahi	40	51-65	36	04	4735
03	Mahoota	38	50-75	32	06	2640
04	Mohra	32	51-63	27	05	2415
05	Misrial	30	53-74	17	13	2210
Total		**182**	**Av-58.13**	**155**	**27**	**23000**

The results of the five villages of household heads (HHHS) out of 200 respondents 91 percent,with 158 ,males (86.81percent) and 24 females (13.18 percent) were in the mean age group of 58.13years indicated that the sample (randomized) of all the five villages was 80.90 percent representative of this area. Our results of this age group is in agreement with Hussain and Routray (2012) in Punjab who conducted their study on level of food accessed, self sufficiency and gap between national food security and conceptual ratios, with respondents as elders (age group of 51-65 years) across gender.

(II) The status of education of the area

The observations recorded revealed that there were 55 matriculates out of total respondents i.e. 182. Out of these 55 matriculates, there were 6 from village Parial (4 M and 02 F), from village Karahi were 12 (8M, 4 F) from village Mahoota there were 13 matriculates (9M, 4F) from village Mohra this number was 9 in total (7M, 2F) and in last from village Misrial the number of matriculates was also 15 in total (11M, 4F) of the HHHs (respondents only).Further in response of our question about family's education we found 40 individuals with the certificate of intermediate. We recorded 12, 5,10,6 and 7 families with twelve years education in Parial, Misrial, Mohra, Karahi and Mahoota respectively. The number of graduates was also significant. As we recorded 42 families of HHH with graduate family members. Out of these 42 graduates there were 23 families with graduate family member in Parial, as detailed in table No.02. These (Both males and females) are the earning members of the HHH.

Table No. 02 showing the status of Education of the families of the House Hold Heads (HHHs) of five villages surveyed in Tehsil RWP, 2017

Sr.#	Village	Total	Matric		FA		BA	
			M	F	M	F	M	F
01	Parial	42	4	02	07	05	13	10
02	Karahi	40	11	01	03	03	03	02
03	Mahoota	38	09	04	05	02	04	03
04	Mohra	32	07	02	06	04	02	01
05	Misrial	30	11	04	03	02	04	02
Sub total		**182**	**42**	**13**	**24**	**16**	**26**	**18**
Grand total		**182**	**55**		**40**		**44**	

Source: M.Phil Economics data of Sher Bahader Socio-economic Survey, AAU, RWP-2017

(III) Population of Educational Institutions

In the five surveyed villages there are two higher secondary schools in village Parial one for boys and one for girls. Two high schools for boys one in village Karahi and one in village Mahoota. There are two middle schools for girls one in village Parial and one in village Karahi. In the surveyed villages we have recorded six primary schools, 2 in village Parial one in village Karahi, one in village Mohra and two in village Misrial. Table 03.

(VI) Food items used as daily need (Animal proteins)

The data collected revealed that the milk consumption was (Mean = 48 liters) for the surveyed villages while it was 60 ,40 , 40 ,40 and 60 liters for Parial, Karahi ,Mahoota, Mohra and Misrial villages respectively. The meat Qty, preferably poultry meat, consumed per month by the families of HHHs as 5.0 kgs (Mean) while in the individual villages the figures were, 06, 05, 04,04 and 06 kgs for the above five villages. The consumption of Eggs was 244 (Mean number) for these five villages per month. HHHs of the surveyed villages reported the monthly consumption of eggs as 240, 180, 300, 200 and 300 for Parial, Karahi, Mahoota, Mohra and Misrial villages respectively. The usage of beef and mutton was also found but very low as compare to the use of poultry. The families with higher monthly income were found being used mutton and beef. The family size, (number of House Holds) (HHs) in all the five villages surveyed was 07-08 as per recorded figures. The prevailing cost of these food items has also been recorded as appear in table No.06.

Table No.06. Showing the Qty of Cost of Animal Food (Meat, Milk, Eggs) per HH in the five Villages surveyed in RWS-2017

Sr .#	Village	Milk		Meat/Poultry		Eggs #		Total
		Qty	Cost(Rs)@ Rs.80/Ltr	Qty in Kg.	Cost (Rs)	Qty	Cost.(Rs@ Rs.8/egg	
01	Parial	60	4800/-	06	2760/-	240	1920/-	9480/-
02	Karahi	50	4000/-	05	2300/-	180	1440/-	7740/-
03	Mahoota	50	4000/-	04	1840/-	300	2400/-	8240/-
04	Mohra	50	4000/-	04	1840/-	200	1600/-	7440/-
05	Misrial	60	4800/-	06	2760/-	300	2400/-	9960/-
	Total	**240**	**21600/-**	**25**	**11500/-**	**1220**	**9760/-**	**42860/-**
		48	**4320**	**5**	**2300**	**244**	**1952**	**8572/-**

Market price (prevailing) milk @ Rs.80/- liter, (Poultry meat, Mutton &beef) @ Rs.460/- kg, Egg @ Rs.8/- each.

Source: Thesis survey data of Sher Bahader, M.Phil-economics AAU, RWP-2017.

Our findings of food grains (wheat, Maize and rice) (table No.5) sugar for energy and cooking oil as a maximum requirement of an average rural family of 7-8 persons, as evidenced from our five villages surveyed together with, food from animal protein sources (such as Milk, poultry meat and eggs)(table No.6) essential for maintenance of health, were close or less than the international standards, as per recommendations of UN food program, World Food Program (WFP) and National Food Standards devised by the M/O food securities and research in line with Health and Nutrition Division of govt. of Pakistan. We still need to grow more to feed our people as per our recommendations as rightly pointed out by Zakir Hussain and Waqar Akram, way back in the year (2008).

Being determinant of food security education has a positive relation with food security. Our results are similar of the results of the work done by Muhammad Khalid Bashir et.*all".* The determinants of Rural Household Food security in Punjab, Pakistan:

An Econometric Analysis. Our results in the table No.16 are quite in agreement with the findings of the mentioned study of Bashir et.all

When cross examination was made in the light of this recently established food basket for rural areas of the Punjab and the five villages surveyed which was completely matched in cost and amount of calories with food basket estimated by the Social policy and development centre indicated that the 39 percent of the population of researched base area of the surveyed villages is suffering the food insecurity. Out of this aggregate 39 percent food unsecured population the 12.63 percent are under severest type of food insecurity. 11.53 percent of the population of these surveyed villages was facing severe food insecurity.14.28 percent of the population was at the verge of food insecurity and little care or participation of government may bring them at the minimum level of food security. Almost 6 percent of the population was at the verge of food security and a small increase in food inflation may bring them under food insecurity. However 54 percent of the population was enjoying the food security due to her sufficient income.Table-13

Table No.13 Showing food expenditures per head, Poverty Line per head, and food security per head of five villages surveyed (in Rs.PM)

Sr.#	Monthly food expenditures In Rs.	Frequency	Poverty line/Head in Rs.	Percentage of population	Food Security
(a)	1000----2000	23	3153	12.63	-1153
(b)	2000----2500	21	3153	11.53	-653
(c)	2500----3000	26	3153	14.28	-153
(d)	3000----3153	1	3153	0.56	
(e)	3153 OR ABOVE	111	3153	61	

Source:. Result of Author's research after cross examination of food expenditures of the five surveyed villages (Parial, Karahi, Mahoota, Mohra and Misrial) and the poverty line set for rural areas by Ministry of Planning and Development of Pakistan Islamabad.

The approach opted to assess the food security in the five surveyed villages was in line of the work done by Meade and Rosen to calculate the food threshold by the sum of the cost of food basket and the cost of other necessities. The food security threshold Our study was not in agreement with Theresa and Choudhary (2008) who carried out studies by increasing 01percent, 05 percent, 10 percent and 20 percent increase in prices of food of food items and found the causality effect on food in security leading to increase in poverty in Pakistan.

Our study was however in close agreement with the work done by Salman and Adnan (2013) and Adil Hussain et al (2011) in interviewing 300 farmers (50 in six districts each) collecting 80-90 percent factual information and found that 34 percent and 28 percent of the rural farmers were poor in mix cropping zones. Their study was carried out in rice growing irrigated areas of Punjab where our study was limited to

only Barani /arid villages of Rawalpindi where rice were not grown by the farmers, surveyed in our study.

Table No.15 showing the Food inflation in Pakistan for the period 2000 to 2010

Years	Food Inflation	Food Poverty Line
2000-01	3.56	697.51
2001-02	2.50	723.40
2002-03	2.83	743.87
2003-04	6.02	788.65
2004-05	12.48	878.64
2005-06	6.92	944.47
2006-07	10.28	1041.56
2007-08	14.36	1141.53
2008-09	26.61	1438.33
2009-10	11.84	1608.62

Source: Pakistan Economic Survey (various Issues)

Table No.16 showing the average rate of inflation (Xm.12.9, Nov.2013 X1=-1.6Sep.2015) for the period 2011-2017 and its impact on food security with respective Food Poverty Line Economic Survey Of Pakistan (ESP)

Period	Food Inflation	Food Poverty Line	Food Insecurity Percentage
2015-16	5.18	2434.15	23.62
2016-17	5.18	2533.95	26.37
2017-18	5018	2665.21	30.21

Source: TRADING ECONOMIC.COM/PAKISTAN BUREAU OF STATISTICS

The impact of inflation was shown by using the average rate of food inflation i.e.5.18 and changing food poverty line in lieu of this food inflation set by economic survey of Pakistan. The example was given just for understanding of the impact of food inflation on food poverty. An increase in food inflation raising the magnitude of food insecurity as is mentioned in the table. Table No.18 is supporting this logic where each increase in inflation raising the food poverty line and each rise in poverty line will disturb the food security situation spicily the low income group of the HHH.

CONCLUSION:

Based on the efforts made, supported with farmer's record, the following conclusions have been drawn: -

Out of a total of 200 respondents 182 respondents (91percent) comprising 158 males (86.81percent) and 24 females (13.81percent), pertaining to 42, 40, 38, 32 and 30 of the above mentioned villages provided maximum information of our approach. The respondents were with the mean age of 58.13 years, 16.86 (the range being mini=50 and maxi = was 75 years. The village population of our study area was recorded as (i) Parial=11000, (ii) Karahi 4735, (iii) Mahoota 2640, (iv) Mohra as 2415 and (v) Misrial as 2210 inhabitants ,totaling to 23000 heads.

RECOMMENDATION:

As a result of this study findings only one recommendation is made to the effect that: -

The status of education evidenced, through this socio-economic survey, demands establishing of a high school in village Misrial and a degree college each for boys and girls in centre of these villages for improvement of higher education in this area. For improvement of skilled labor the technical education is an earnest demand of people of the area. With establishment of such an institution the skilled labor may be very much helpful in increase of the volume of foreign remittances which may lead towards the prosperity of the people as well as elimination of the poverty.

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EFFECT OF SCAFFOLDING ON ENGLISH ESSAY WRITING SKILLS OF SECONDARY STUDENTS IN RURAL ISLAMABAD

Uzma Kanwal[1], Naveed Sultana[2], Nadia Hafeez[3] and Muhammad Hafeez[4]

ABSTRACT

The comparative and investigative research based study was carried out in finding out effect of scaffolding on English essay writing of class-X students from three high schools (a) Adnan Arshad Shaheed Model College for Boys (AASMCB) and (b) Federal Govt. Girls Secondary School (FGGHSS) Kot Hathiyal Bhara Kahu in Rural Islamabad, involving 90 students (30 from each school).A pre-test was given to write an essay of one page (70-100 words) and scoring was done. Scaffolded instructions were provided, based on validated lessons, for 3-4 weeks and post-test was given to compare the scores earlier piloting was done, successfully supported with statistical evidence. The post test scores Evaluated mean values towards vocbl of a, b and c lanes were 39.8±0.61, 37.5±1.07 and 41.6±0.47 while splgs mean scores were recorded as 29.7±0.55, 26.4±0.74 and 28.0±0.80 with ranges of Max and min respectively. The post test scores evaluated towards vcbl of three lanes of a, b and c were recorded with mean values as 39.9±1.07, 40.1±0.79 and 41.5±0.41 while the splgs, mean values of these three lanes were 31.5±1.09, 29.6 ± 1.09 and 30.4 ± 1.09 respectively, with the ranges of max. and min. It was observed that in all the three school students I, II and III evidenced significantly $P<0.001$, $P<0.002$ and $P<0.003$ positive improvement in students Vcbl. and Splgs with scaffolding instructions in essay writing. The F-crit values also authenticated our statistical analysis in all the students of I, II and III as F-crit=3.8, F-crit=2.7 and F-crit=2.9 (which is more than 1.96) the theoretical narration speaks that if F-crit value is more than 1.96, the results stand significant. The students involved, were quite encouraged for such an instructions with positive effect on the improvement of vocabulary and spellings. The statistical evidence as concluded proved to be implemented in befitting way and resulted in significantly positive manner.

Key words: Scaffolding English Essay Writing Secondary Students Rural Ibd.

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INTRODUCTION:

School education, especially high school education is a stage of growing youth which reflects the real pedagogical perspective of instructional strategies of teachers as can be observed in the students specially the medium of instruction, the English the real mediating role of a language (which was not the mother tongue) of English writing is getting importance, the socio-cultural need of what was dynasties old requirement and the only language of communication importance, the history goes centuries back Before Christ (BC) which is vanishing with the threat of modern Information Communication Technology (ICT) a midst digital era of SMS and emails etc as rightly pointed out by researchers such as Mehdi Riazi's (2011) presentations in 12th National conference, in efforts made by teachers on EFL students English writing for improvement. Most of the developing nations hence majority of researchers have termed it as English as Foreign Language (EFL, duly document by Avan Kamal Aziz

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Faraj (2015). Scaffolding, defined as supportive effort in a sustained effort towards grooming student's skills especially in English writing, the term is from the Vygotsky's social learning theory .He used the term of ZPD (zone of proximal development) and scaffolding is a methodological technique used for the improvement of the students and used to make a learner potential and competent learner. .In this study specially the scaffolded instructions, will be repeatedly used towards the two parameters (i) Vocabulary, (ii) spellings to make them capable learners of English by scaffolding method. When implemented such type of the practical by learners, can evidence significant impact as deliberated by researchers, at home such as Jamila Hashmi-2018) and from other countries such as Priya Rani and Shivani Thakar (2015) from India.

REVIEW OF LITERATURE:

Avan Kamal Aziz Faraj (2015) conducted a study scaffolding English writing ability as foreign language (EFL) students writing through instructional approach conducted at Keya University, English Language Department (ELD), involving 30 students were subjected to pre-test and post-test. The study aimed to investigate teacher's scaffolded effect on student's English learning, specially writing capability. The process of English writing was evaluated in the parameters of (a) pre-writing (b) drafting (c) revising (d) editing and (e) publishing. The results found showed that the students has positive and significant improvement in post-test as compared to pre-test scoring. It was concluded that majority of students had faced difficulties of (f) vocabulary and (g) grammar.

Bahman Gorjian, JafarIzadpanch and Muhammad Sayahi (2014) found the cognitive reading and writing strategies in L-2 reading comprehension and writing skills improvements in 120 homogenous pre-university student, across gender (60-boys/males (M) and 60 girls/female(F) students. Using pre-test scoring for comparison with post-test, involving conventional instructions. The statistical approach of ANOVA was conducted to compare the means of both the groups and it was found that strategic instruction significantly imporved Iranian EFL students, across gender.

Ezeokoli and Lgubor (2016) carried out an instruction based study towards improving secondary school students towards achievements in English essay writing. They used two modes of structure based instructional strategies, in Nigeria. The study determine two modes of Essay structure based instructional strategies (ESBIS) achievements in (a) argumentative and (b) expository (cause/effect) including moderating effects on (c) vocabulary knowledge and (d) essay writing, adopting (i) pre-test and post-test (ii) control group and (iii) quasi-experimental design, using 3x2x3 factorial matrix. In the study two (local govt. areas LGAs) with three (03) secondary

schools from each LGA while two intact SS-II (secondary school_II) classes were assigned the essay writing work. The results of the study showed scoring achievements of tests in argumentative (r=0.79) and expository essay (r=0.83) with additional effort of questionnaire on students, attitude to essay writing (r=0.73), vocabulary knowledge (r=0.83). The data was analyzed using ANCOVA (Analysis of Co-variance. A total of 2,284 students were involved and there appeared significant main effect of instructional strategy (0.05) alpha while the results of two way interaction effect to treatment and moderator variables was not significant in each of argumentative and expository essay.

MATERIAL AND METHODS:

The population of students of Federal Government Girls High Schools (FGGHS) as well as rural Islamabad. FGBH Schools was taken as population at large. A total of 40 students were taken as a sample for experimental groups each from the three schools totaling 120 students and this was our study population. The technique used simple random sampling and scored for pre- test and post-test. Scoring will be evaluated for the two parameters namely .1. Vocabulary and spellings . A pretest was given to the class with freehand essay writing of 80-100 words. The class teacher the Head Teacher and the researcher worked as invigilator while the Point scoring was done on the following parametric approaches:- (i) Vocabulary use 50 points (ii) Spellings 50 points

Scoring Total: 100 points

RESULTS:

The class-X students, subjected to pre-testing and post-testing of two targeted schools (30 each), N=60, remained present and None of the students was found absent, in the study. The school involve were

a. Adnan Arshad Shaheed Model College for Boys (AASMCB)

b. FG Girls Model Higher Secondary School (FGGMHSS) Kot Hathiyal Bharakahu Islamabad.

1. Pre-test scoring evaluation of AASMCB Bharakahu.

As understood, the students were seated in three rows a, b and c with ten students each, identified as a=1-10, b=11-20, c=21=30. The mean scoring evaluated in the pre-test of line was a=34.6±1.39 towards vocabulary (vcbl) and 26.4±0.60 towards spellings (splgs) with the range of Max:40 and Min:30 in while the range of Max:29 and Min:24 was recorded in spelgs. The mean value of line b were found as 32.2±1.17 with the range of Max:38 and Min:27 towards vocbl and 22.6 ± 0.66 in splgs with the

range of Max:26 and Min:20 while in lane c the mean score evaluated were 36.7 ± 0.66 and 22.5 ± 0.87 respectively.

2. Post test score evaluation of class-X Students of AASMCB Bhara Kau

The post test scores Evaluated mean values towards vocbly of a, b and c lanes were 39.8±0.61, 37.5±1.07 and 41.6±0.47 while splgs mean scores were recorded as 29.7±0.55, 26.4±0.74 and 28.0±0.80 respectively.

3. Post test score evaluation of FGGMH/S Bhara kahu Islamabad.

The post test scores evaluated towards vcbl of three lanes of a, b and c were recorded with mean values as 39.9±1.07, 40.1±0.79 and 41.5±0.41 while the splgs, mean values of these three lanes were 31.5±1.09, 29.6 ± 1.09 and 30.4 ± 1.09 respectively.

CONCLUSION:

After carrying out the complete study, the following conclusions have been arrived at :-The scaffolded instructions, in class-X students improved the spellings and vocabulary in English essay writing. A mediocre number of 90 students involved 30 from each school was manageable and scores conveniently evaluated. The period of scaffolded instruction was 2-3 weeks, as agreed upon by the class teachers and head teachers of the school involved. The students involved, were quite encouraged for such an instructions with positive effect on the improvement of vocabulary and spellings

RECOMMENDATION:

As a result of this study findings only one recommendation is made to the effect that: -

Since the scaffolded instructions improved the vocabulary and spelling of class-X selected students of three schools in Rural Islamabad this should be made practical in each school. Since this study had been limited to two parameters of vocabulary and spelling in class-X English essay writing, it is recommended that similar studies be carried out with more parameters in rural areas. It is also recommended that similar studies be carried out in class-IX and Class-X and across gender.

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EFFECT OF BILLION TREE AFFORESTATION PROJECT (BTAP) ON SOCIO ECONOMIC LIVELIHOOD OF LOCAL COMMUNITIES IN DISTRICT HARIPUR, KPK, PAKISTAN

Zohaib Hassan[1] Fouzia Anjum[2] Gul Jan[3]

ABSTRACT

This informative and research based article provides effect of BTAP on socio-economic livelihood of local communities in district haripur KPK Pakistan. The study area is located within KPK province of Pakistan. Haripur district located 65 km north of the Federal Capital Islamabad. The district area is 1725 km square and population of 1,003,031 inhabitants, with 498,481 men and 504,483 women. Out of 200 respondents interviewed for data collection, 68% household showed main source of income farming and labour. (11.5%) people livelihood source only farming and 35% were dependent on both farming and labour. Labour alone was source of income of 21.5% respondents, who had no land and lack of other resources. It was recorded that Plantation has affected the crop production and positive effect of plantation had been observed on agriculture crop production and protection as majority of respondents (78.5%) were of the view that due to planting of trees agricultural production had increased and the problem of grazing animals was controlled. The study also revealed that majority of respondents were indulged in farming and working as labour for livelihood. It was concluded that Majority of respondents possessed more barani land then irrigated lands and a larger percentage (43%) of people were landless. These who were close to the afforestation area were provided jobs as jobs were created in PTAP Haripur, during the study. It was also concluded that such projects were needed to be implemented in hilly and sub-hilly area for socio-economic uplift of local communities.

KEY WORDS: BTAP-Haripur , Socio-Economic , Local Communities Cost Benefit Ratio, KPK Pakistan

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INTRODUCTION:

The importance of forests can never be underestimated. We depend on forests for our survival, from the air we breathe to the water we drink & the wood we use. Forests are crucial for the sustenance and existence of life on earth especially for the rural poor in forest fringe communities. One out of four of the world's poor depend directly or indirectly on forests for their livelihood (World Bank, 2000). An estimated 1.3 billion people (about one-fifth of the global population) derive direct and indirect benefits from forests and trees in the form of employments, forest products and contributions to livelihoods and incomes. Some 300-350 million people (about half of whom being indigenous) live within or close to dense forests and depend almost entirely on forests for subsistence (World Bank, 2016).

Forests are main source of timber, fuel wood, medicinal plants, food, water as well as ecotourism and recreation. Forests are crucial for the sustenance and existence of life on earth especially for the rural poor in forest fringe communities. In addition to that forests provide many other services that are very essential for human welfare. Forests absorb harmful greenhouse gasses and mitigate climate change, they protect

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Water sheds and prevent soil erosion, these serve as a buffer and protect us from natural disasters like rainfalls, storms and floods. The general objectives of this study was to identify and analyze the potential socio-economic impact of a Billion Tree Afforestation Project on the livelihoods of rural residents in the district Haripur, KPK Pakistan.

REVIEW OF LITERATURE

Panda *et* al. (1996) presented and discussed the data of various plantations areas raised under various schemes/projects with the intervention parameters (i) Villages woodlots, (ii) Reforestation (iii) rehabilitation of degraded forest and barren areas, (iv) Forest farming for the rural poor, (v) Silvopastoral planting, (vi) Institutional planting, (vi) Peri-urban planting and (vii) Farm forestry in Dhenkanal Forest Division, Orissa..

Sharma (1996) which discussed the main analytical techniques used for appraising proposed social forestry projects in India. It was argued that goal programming needed to be complemented with social cost benefit analysis in order to achieve a broader holistic approach that encapsulated the socioeconomic objectives of social forestry policy. The other analytical techniques used (input-output analysis, the optimum output model and multiplier analysis) were found to be inadequate for the evaluation of social forestry.

Ume-laila and Anjum (2001) studied socio-economic impact of social forestry on farmers in district Faisalabad, Pakistan a surveyed and selected 150 respondents and analyzed the data. It was found that majority of the respondent were getting wood for fuel consumption and getting income from tree on their farms. Increased global valuable timber species such as mahogany has brought some financial benefits for poor communities living near forests. but there also evidenced to show that usually, poor communities who a completely dependent on forests lose out to powerful interests and logging companies who reap most of the benefits as also supported by (wwf) Belcher (2005) studied forest and poverty reduction to achieve poverty alleviation through forestry required protecting poverty mitigation functions, enhancing income and employment options, and taking advantage of opportunities to build and strengthen local institutions through policies and project-level interventions.

Salby *et al.* (2005) produced a report on forest and afforestation in context of rural development in Finland as carried out in a study of three regions and reported that forestry and afforestation had a major role in different development discourse. One of them the community sustainability and further reported that forestry development should contribute towards the maintenance of community stability in rural margins.

McPherson (2006) studied urban forestry in North America and stated that urban forestry being very important because of their geographic extent, with impact on local economies further reported that the total annual income of urban forestry sale in California was had been $38 billion. It was also claimed that the urban forest could provide substantial environmental, social, economic, and recreational benefits to urban dwellers and reitrated that tree planting provided jobs opportunities for local youth and could overcome urban poverty.

United Nations Environment Program (UNEP-2006) in cooperation with the World Agro forestry Centre launched Plant for the Planet: the Billion Tree Campaign as a way of empowering the global public to face the challenge of this generation. Countless more could provide food for people, in rural areas and cities alike together will supply forage for livestock and for insects that pollinate crops, produce wood and natural oils for building and for fuel. Yet others would use to create medicines to heal the human body and essential oils to ease the soul. All will draw carbon dioxide from the air, leaving little less vulnerable to the threats posed by climate change.

MATERIAL AND METHODS:

The study area is the Haripur district located within the Khyber Pakhtunkhwa (KPK) province of Pakistan located 65 km north of the Federal Capital Islamabad with an area of 1725 km square and has a population of 1,003,031 inhabitants, with 498,481 men and 504,483 women was taken as population. The average household size 6.6 members and the number of total households is 163,490 with a density of 580 inhabitants per km square district wise census result Pakistan, 2017). The data collected was reviewed and transferred on a tally sheet for the purpose of compilation and tabulation. Simple statistical techniques of average and percentages were used for interpretation and discussion. The main parameter of the study of socio-economic aspect were (i) Age, (ii) family type (iii) family size (iv) Education (v) Source of income and (vi) Composition of livestock farmers.

RESULTS:

Age of respondents. The interviewed respondents who are heads of their families are mostly (80 %) above 30 years age. Household head is the person who makes decisions about all family affairs including property. The age distribution of respondents is shown in the table 4.1 as:

Table 4.1: Age distribution of Respondents in study area.

Age Classes	Frequency	Percentage(%)
16-30	40	20.0
31-50	103	51.5
Above 50	57	28.5
Total	**200**	**100**

2. Family Type. The study shows that majority (58.5%) of respondents are living in single family while 41.5 % of respondents are living in joint family. In villages more people were living in joint families as compared to urban areas where people living as single family were dominant. The average family size in the study area is 6-7. Tabulated representation is given in table 4.2 as:

Table 4.2: Family Type

Family Type	Frequency	Percentage(%)
Single	117	58.5
Joint	83	41.5
Total	**200**	**100**

4.3. Household Size. The data reveals that household size of less than ten family members are 83%, above ten family members is 16.5% and below six members is 25% as shown in table 4.3. Average family size for the study area was 6-7 persons per household.

Table 4.3 showing the Household size

Classes	Frequency	Percentage(%)
1-5	50	25
6–10	117	58.5
Above 10	33	16.5
Total	**200**	**100**

4.4. Education Level.200 respondents were interviewed and the data was collected from them, out of which 43 (21.5%) are illiterate while 157 respondents have some education of primary level and above. It reveals that literacy rate is improved (53.7%) which is higher than the reported rate in census report, 1998. The education level of respondents and there percentage is given in table 4.4:

Table 4.4: Education level in Haripur Forest Sub-Division, KPK.

Category	Number of Respondents	Percentage(%)
Primary	27	13.5
Middle	40	20
Matric	50	25
FA/FSc	23	11.5
BA	17	8.5
Illiterate	43	21.5
Total	**200**	**100**

4.5. Source of Household Income. Out of 200 respondents interviewed for data collection, 68% household main source of income is farming and labour. (11.5%) people livelihood source is only farming and 35% are dependent on both farming and labour. Labour alone is source of income of 21.5% respondents, who has no land and lack of other resources. The labour category included local, down country like Karachi and abroad. 20% respondents main source of livelihoods is Govt/Private service and 11.5% of respondents do some sort of business as shown in table 4.5

Table 4.5: Source of Household Income

Source of Income	Frequency	Percentage (%)
Farming	23	11.5
Farming and labour	70	35
Labour	43	21.5
Service	40	20
Private Business	23	11.5
Total	**200**	**100**

4.12. Effect of plantations on agricultural lands. Plantation has affected the crop production and positive effect of plantation has been observed on agriculture crop production and protection as majority of respondents (78.5%) are of the view that due to planting of trees agricultural production has increased and the problem of grazing animals is controlled. The other advantages are soil erosion control and less flood hazards. Whereas, 10% says that due to plantation the crop production is decreased. While 11.5% were unsure of the effect so did not answer the question. Results are shown in table 4.12 and fig 4.12 below.

Table 4.12: Effect of Plantation on Agriculture land

Effect	Frequency	Percentage(%)
Negative	20	10
Unsure	23	11.5
Total	**200**	**100**

4.14. Livestock Composition. The livestock composition data was also collected and it reveals that livestock population consists of 11.5 % cattle, 61.5% goats and sheep, 19.5 % buffalo, 7.5% of horse/donkey and mules.

Table 4.14: Livestock Composition in Haripur Forest Sub-division

Type of Livestock	Frequency	Respondents	Percentage(%)
Cattle	15	23	11.5
Goat/Sheep	80	123	61.5
Buffalo	25	39	19.5
Horse/Donkey/Mule others	10	15	7.5
Total	**130**	**200**	**100**

CONCLUSION:

Based on the efforts made, supported with farmer's record, the following conclusions have been drawn: -

1 Joint family system is common in majority villages of the study area while in developed areas single family system is common. Average household size is of 6-10 family members.

2 Majority of the respondents i.e. 80.3% are literate.

3 The study also reveals that majority of respondents were indulged in farming and working as labour for livelihood.

4 Majority of respondents possessed more barani land then irrigated lands and large percentage (43%) of people were landless.

5 Majority of respondents in the area keep livestock for daily requirement of milk and butter. Among them 80% are also involved in selling of animals, milk and butter; and wool. Majority of respondents own 1-3 livestock per household.

RECOMMENDATION:

As a result of this study findings only one recommendation is made to the effect that: -

Before afforestation, due attention should be paid to the supply of fuel and fodder to the landless.

1 It will be better if some area is reserved for their need of fuel and grasses. Economic uplift of the local population, increase in literacy and awareness creation should be promoted so that it will increase the liking of plantation.

2 Payment to nursery growers and other employees of the project should be done on proper time. Mixed plantation must be encouraged and priority should be given to indigenous and multipurpose trees.

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EXPLORATION OF SUPERSTITIONS AMONG TEACHERS AND STUDENTS AT HIGHER LEVEL

Nadia Hafeez [1] Naveed Sultana[2] Uzma Kanwal[3] Muhammad Hafeez [4]

ABSTRACT

This research article is based on a study carried out with the main objective of exploring the evidence of superstitious beliefs in students and teachers at higher level involving male graduate students (M-grad students) and Female Graduate students (F-grad students) of various six (06) various department (depptt) of four universities (i) AIOU, PMAS, NUML and QAU Islamabad involved 120 students (60 M, 60 F) and 60 teachers (30 M and 30 F) based on the questionnaire while in addition 20 teachers and 20 students (50% across gender) were also involved on interview based towards querries. The parameters identified and validated were (a)=Beliefs , (b) = lucky number (odd/even) (c) see a lucky person (d) crossing way (by black cat) (e) carrying object for luck (f-1) specific odd number (f-2) specific even number (g) breaking of any item, (h) Astrology/horoscope (i) dreams (good/bad) (j) luck in sports bingo/lottery and age factor of respondents. In addition to belief comparatively lower percentage of odd/even number in Male grad. Students while more percentage was recorded in female grad students. It was concluded that Superstitions beliefs were evidenced in graduate students with varying trend across gender.Such beliefs were also evidenced in teachers, with mediocre trends at university level, across gender. It was recommended that some of the superstitious beliefs recorded in the literature reviewed must also be included in further studies. It is also recommended that exclusive studies be carried out in college students and high schools across gender.

KEY WORDS: Superstitions, Teachers and Students, Higher level

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INTRODUCTION:

Traces of superstitions can be detected in the fibers of every society. The prevalence of superstitious beliefs can be stretched from old primitive cultures in the form of paranormal or superstitious activities. Such beliefs have been regarded centuries old socio – cultural belief not only in Indo-Pakistan sub-continent but also in south Asian countries and Latin America , as well as in the developed countries such as China , New-Zealand , Australia and majority of the European countries and US as documented by Julie Carins and J.Stevenson (2004).

The superstitions have recently been recorded in the early childhood where pupils of science were evidenced with such beliefs in Nigeria , in 400 early childhood pupils towards good luck or bad luck as statistically evidenced in the work done by Josephine et al., (2015) and recommended revision of curriculum of early childhood schools an teaching concept of superstitions for improvement. The superstitions which we were told by our elders years ago have been regarded as Socio-Cultural beliefs most of which have been observed as happening in one way or the other narrated in the other

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narrated in the reviewed work by researchers and needs to be mentioned in the introduction part of the synopsis. Majority of workers have agreed based on their work that number seven (07) has been a trade mark of good luck in many EU member countries e. g in gambling or a bet , even educated youth , the university students including their teachers have been observed for targeting seven as lucky number as documented based on a Decades review of researches by Afreen Faiza (2018).

REVIEW OF LITERATURE

Khusro Ramezani, Muhammad Ramezani and Zahra Ramezani (2016). **Invalid source specified.** forwarded a comparison of the trend of superstition in educated academics and commons in evaluating 500 people undergraduates ,189 graduates 189 and 150 educated people who significantly believed (P-0.0001) , also married people believed more than unmarried (P-0.0001) , older people believed more than the younger's (P-0.0001) whereas the college educated men and women was not different but as the results showed the university education reduced superstitions in managers and reducing beliefs of superstitions studying higher education in a good way as concluded. They used instrument 81 , a self-made material and reliability found was 0.932 obtained by using cronbach.

Sudipta Chakraborty**Invalid source specified.** forwarded a study on comparative analysis of superstitious beliefs as existed in college students exploring attitudes of on campus students of Sibsagar College , Jay Sagar Krishna Kanta Handique State Open University (KKHSOU) India. She selected A=167, together with B=231 of the same college who were receiving education on regular basis, hence total students involved were (A=167+B=231) 398(N=398). The data collected was based on a self –made questionnaire and interview –schedule. The findings of the study as was found were not satisfactory as significant difference was observed in the student studying on open distance mode and students studying under conventional mode with an overall results that superstitions were still existed in students.

MATERIAL AND METHODS:

The following methodology was adopted in the light of objectives of the study:-

1.1. Population

a) Universe of Population:

The enrolled students of the universities involved of RWP-ISBD twin cities was the universe population of the study.

b) Study population The study population was the total number of graduate students of the universities involved.

1.2. Samples and Sampling (Graduate students)

The universities selected conveniently towards sampling technique was stratified and random. Out of the respondents (students and teachers) across gender ,across discipline, subjected to scoring evaluation .The quantum of sample was (N= 140) comprising of (a) AIOU (20) Students ,(b) QAU (20), (c) NUML(20), (d) PMAS UAAR(20), M.A/MSc or 16 years of education students identified from the seven universities totally 140 both 50% Males and 50% Females.

1.3. Teachers Sampled

A total of 36 teachers of the seven universities a, b, c, d, e, f, g each across gender, were involved on interview basis for the evidence of superstitions.

1.4. The Instrument/Research tool

The explorative and investigative study was based the instrument used as a tool for data collection, the semi structured questionnaire, used for socio-cultural evidence

1.5. Constituents of the Questionnaire

The main ingredients targeted as the parametric approach was concise and to the point, identified as under:-

(a) Belief
(b) Fortune number (odd-even)
(c) See a luck person
(d) Crossing way (by black cat)
(e) Carry object for luck
(f) Specific lucky number (1-3-5-7-9-11 and 2-4-6-8-10-12)
(g) Breakage of home
(h) Astrology/horoscope
(i) Dreams (good/bad)
(j) Group/team work for success
(k) Effect on daily activity
(l) luck in sports bingo/lottery

3.6. Scoring Evaluation

Each parameter (a to l) was allotted scores of four categories as under:-

(i) 0-25%
(iii) 51-75%
(ii) 26-50%
(iv) 76-100%

The parameter of age was categorized for scoring as

(i) 20-25 years
(iii) 31-40 years
(ii) 26-30 years
(iv) 41 and above

3.7 Data Collection

The respondent students (questionnaire based) and teachers (inter view based) as indicated, were score evaluation as per categories, narrated above

and all data was summarized , averaged mean values worked out and was presented in tabluted forms, in the data analysis portion of this write-up

3.8. Data analysis/statistical analysis

All the data collected was thus subjected to statistical analysis using Excel- ANOVA And SPSS-V-18. The computerized statistical results, obtained to the probability level of $P<0.05$ using "t" test and F-critical (F-crit) test for significance. The statistical results computer print outs have been attached as Annexures, at the end of the thesis.

RESULTS

4.1 Data Analysis

The raw data was summarized, percentages worked out with statistical analysis for all the collected for students (of seven universities) and teachers, across gender, as detailed below:-

4.2 Results

Piloting was carried out in students of Education AIOU-Islamabad and all the summarized data from graduate students of Education Deptt: was subjected to averaging, percentages and working out means and tabulated from table No.01 through table No.04 supported with statistical analysis in each parametric approach of the study. The detailed tables supported with statistical analysis in each a, b, c, d, e f and f-1, f-2 g, i, j,k, l the study.

4.3 Results of Respondents students

a) Superstitions beliefs of Male (M) Students

The mean value of scores was recorded as 50.0±5.77 with the ranges of maximum (max.) 75 and minimum (min.) 25 while the scores evaluated for Female students showed mean value of 56.5±4.01 with the range of max. 75 and min.30 respectively.

b) Superstitions in odd and even numbers across gender:

The mean values of scores obtained from male student was recorded as 47.0±3.43 with the range of max. 60 and min. 35 whereas the female students averaged scores mean values evaluated for odd/even numbers appeared as 53.0±3.44 with the range of max. 65 and min. 40 respectively.

c) Superstitions belief in seeing lucky person

The mean scores evaluated in male students was recorded as 42.0±3.51 with the range of max. as 42 and min.as 25 whereas the female students responded mean score was recorded as 57.0±3.34 with the range of max. 75 and min.as 40 respectively.

d) Superstitions belief in crossing way (by black cat)

The male students cumulative mean score value appeared as 37.0±3.00 with the range of max.55 and min.as 25 while the female students summarized responded score mean value appeared as 62.5±3.77 with the range of max.70 and min. as 45 respectively.

e) Superstitions belief in carrying object (for luck)

The male students cumulative responded scores were evaluated mean value of 37.0±3.97 with range of max.55 and min.25 while the female students responded score evaluated mean value was recorded score evaluated mean value of max. as 75 and min. as 45 respectively.

f) f-1 Superstitions in specific odd number for luck (01, 03, 05, 07 , 11 and 13)

The summarized cumulative averaged scores evaluated in male students, recorded mean max.as 60 and min. as 30 whereas the mean values in specific odd number for luck in female students was 57.5±3.09 with the range of max.as 70 and min.as 40 respectively

f-2 Superstitions in specific even number for luck (02, 04, 06, 08,10,12)

The cumulative averaged scores in superstitions beliefs evaluated mean values were recorded in male students for even numbers as 44.5±3.90 with the range of max. 70 and min. 30 whereas the female students mean response was valued as 61.0±4.70 with the range of max.80 and min as 30 respectively.

g) Students responded cumulative score evaluation in breakage items (for luck) across gender.

The male students response (s) mean value was recorded as 45.0±4.01 with the range of max as 60 and min as 35 while the female students responsed score evaluated mean value were recorded as 55.0±4.01 with the range of max. of 70 and min. as 40 respectively.

h) Students cumulative responded score in astrology/horoscope across gender

The cumulative mean value recorded in male students was 43.0±4.23 with the range of max.as 60 and min.as 30 while the female students responsed score evaluated was recorded as 57.5± 4.01 with the range of max.as 75 and min. of 30.

i) Students cumulative responsed scores in dreams (good/bad) in luck, across gender

The cumulative mean scored value of male students in dreams was recorded as 49.0±4.96 with the range of max.as 70 and min. as 30 whereas the female students responded scores mean value recorded was 47.0±4.08 with the range of max.as 80 and min. as 30 respectively.

j) Students cumulative responded scores in group/team work in luck across gender

The cumulative mean scored value in male students was recorded as 55.0±4.53 with the range of max.80 and min.as 30 while the mean score value in female students in team/group work (in luck) was recorded as 38.5±4.35 with max. of 60 and min. of 25.

k) Students cumulative responded scores in effect on daily work (in luck) across gender

The cumulative responded scores mean value in male students was recorded as 51.0±3.87 with the range of max of 75 and min. of 35 while the female students scores mean value recorded was 40.0±3.33 with the range of max. 60 and min of 30 respectively.

l) Students cumulative responded scores of luck in sports/bingo/lottery, across gender

The cumulative mean score recorded in male students towards luck in sports/bingo/ lottery was 52.5±3.18 with the rage of max of 70 and min as 30 whereas the mean score recorded in this parameter was 44.0±4.43 with the range of max. as 65 and min. as 30 respectively .

4.4 Cumulative responded scores of students of sociology Deptt AIOU, Across gender

The cumulative scores of male respondent students in parameters of a,b,c,d,e,f-1, f-2, g, h,i, j, k and l was recorded as 39.0±3.14, 46.5±2.98, 48.5±3.09, 54±4.47, 48.5±3.73, ±56.5±3.51, 51.5±3.08, 36.0±2.43, 44.5±3.28, 53.5±3.51, 65.5±2.62, 58.5±3.87 and 54.0±4.76 respectively as presented in table

No.03 while the mean recorded cumulatively for all the parametric (a through l) in female students as 53.5±3.25, 50.5±3.11, 45.5±3.20, 55.0±3.72, 46.5±3.23, 54.5±3.20, 44.5±3.87, 64.5±3.02, 62.0±3.16, 63.5±2.00, 54.0±1.82, 57.0±3.07 and 50.0±2.98 respectively.

4.5 Cumulative responded scores of post graduate: students of Pak. Studies QAU-Isbd towards superstitions across gender

The male students cumulative averaged responded scores in the parameters a to l was recorded as 45.0±3.41, 48.0±3.74, 49.0±2.96, 43.0±3.0, 47±3.00, 53.5±3.66, 49.0,3.71, 41.0±2.62,44.0±3.0, 46.0±3.94, 56.0±3.31, 45.0±3.16 and 43.0±2.13 respectively.

4.6 Cumulative responsed scores of post graduate: students of PMAS-AAU-RWP towards superstitions across gender

The cumulative summarized score of post graduate male students, of Education deptt PMAS AAU mean values recorded for the parameters from a through l were 40.0±2.62,43.0±1.85, 37.5±2.81, 44.5±1.80, 50.5±3.90, 47.0±3.14, 45.0±2.47, 43.5±2.76, 48.0±2.90, 51.0±3.78, 65±3.57, 54.5±5.79, 43.5±3.16, respectively.

The cumulative score of female respondents towards superstitions, in the parametric sub sects of a through l mean values were 56.5±2.69, 61.0±1.63, 64.5±2.29, 65.0±2.40, 64.5±3.68, 59.0±2.66, 62.5±2.60, 62.5±3.27, 61.5±1.67, 58.5±3.57, 55.0±2.35, 51.0±2.24 and 47.5±3.35 respectively.

4.7 Cumulative responded scores of post graduate: students of Education Deptt: NUML Islamabad towards superstitions across gender

The cumulative averaged responded scores of male students, in various parametric sub sects of superstitions beliefs from a through l as recorded were 46.0±2.86, 44.0±2.86, 42.5±2.38, 39.0±1.86, 36.5±2.90, 41.5±2.36, 42.0±2.00, 40.0±3.07, 44.5±2.52, 49.0±4.87, 62.5±3.18, 45.0±2.23 and 44.0±3.14 respectively.

The female students responded scores towards superstitions beliefs of the parametric sub-sects as recorded mean values were 58.5±3.48, 61.5±3.65, 60.5±2.92, 57.5±2.50, 54.5±3.68, 60.0±3.26, 55.5±3.76, 57.0±3.74,61.5±2.24, 58.0±3.67, 54.0±3.76, 58.5±2.83 and 55.0±3.41 respectively.

4.8 Cumulative Teacher respondent's scores evaluated towards superstitious beliefs of education department PMAS-AIOU-RWP, a cross gender:

The male teachers respondent commulative scores towards parametric subsets of superstitions, from (a) through (l) as recorded were 37.6±2.18, 41.0±2.60, 38.0±0.57, 34.5± 1.45, 32.5±2.33, 46.5±1.20, 43.5±1.20, 51.33±6.8, 48.5±4.50 and 36.0±1.52 respectively.

The female teachers cumulative responded scores towards superstitious belief of parametric sub-sects as recorded were 53.5±3.51, 48.5±1.45, 54.0±4.50, 47.0±2.30, 67.4±1.85, 53.6±5.36, 62.5±5.23, 58.5±6.7, 49.0±1.52, 64.8±7.20, 53.8±1.20, 62.5±0.88 and 39.5±6.65 respectively.

4.9 Cumulative Teachers respondent's scores evaluated towards superstitious beliefs of Education Department NUML, Islamabad 2020

The cumulative score of male teachers respondent, towards targeted parameters of superstitions for a, b, c , d, e, f-1, f-2, g, h, e, j, k and l as recorded were 45.33±4.25, 40.33±4.91, 37.66±2.02, 38±2.08, 43.33±0.88, 45±1.15, 40±2.30, 35.66±1.20, 48±2.86, 47±1.5, 64±4.61, 48.66±3.8 and 47.66±2.30 respectively.

The female teachers' responded scores, as evaluated towards targeted parameters of superstitious beliefs for a, b, c, d, e, f-1, f-2, g, h, I, j, k and l mean values were 48.33±2.40, 45±3.51, 58±3.51, 45.66±5.17, 64.33±3.48, 54.66±3.85, 47.33±3.84, 54±3.78, 38.33±0.88, 55.33±4.09, 52.66±4.05, 69±1.52 and 51.33±6.64, respectively.

4.10 Cumulative teachers responded scores of Education department AIOU, Islamabad towards superstitans-2020.

The cumulative teachers respondent's scores, mean values as recorded in the targeted superstitions of a, b, c, d, e, f-1, f-2, g, h, I, j, k and l were 49.33±2.18,, 54.33±7.31, 41.66±2.84, 37±2.64, 41±3.78, 51±1.15, 36±1.15, 39.66±2.60, 50±1.52, 65.66±3.48, 74±3.21, 41.66±6.69 and 46±1.52 respectively.

4.11 Interview Based score evaluation of students across gender

In addition of the questionnaire based work, an effort was made to interview a total of 18 good students of three university department namely Edu. Department AIOU, Education Department, PMAS-AAU, Rawalpindi and Sociology Department, Quaid-i-Azam University towards suprstts. Beliefs, 50% across.

The cumulative averaged scores evaluated for the 09 (nine) students M-Good students as recorded for parameters of a, b, c, d, e, f-1, f-2, g, h, I, j, k and l were 45±2.65, 47±3.54, c-38±2.13, d35±3.40, e34±3.33, f-1 14.32, f-2 40±3.11, g33±4.22, h38±4.32, i43±2.22, j44±4.33, k40±3.32 and l 37±4.56 respectively.

Simultaneously the F-Good students 09 showed meters of a, b, c, d, e, f-1, f-2, g, h, i, j, k, and l as 53±2.22, 48±4.33, c=47±3.23, d=44±3.43, e=51±4.44, f-149±2.43, f-2 52±2.22, g=44±3.12, h43±3.56, i54±3.21, j=55±4.43, k=41±2.12 and l 42±4.43 respectively.

4.12 Interview based teachers) responded scores evaluated, from various department of 03 universities.

The cumulative averages scores evaluated for 09 university male teachers (03 From each university department) mean values recorded were a=41±2.65, b=43±3.76, c=38±2.12, d=37±2.43, e=34±3.36, f-1=37±3.43, f-2=32±4.33, g=33±4.44, h=39±3.22, i=41±4.33, j=38±2.44, g=33±3.55, h=39±3.74, i=41±2.89, j=38±1.43, h=36±5.44, l=34±3.44 respectively.

Whereas simultaneously the 09 F-Teachers interviewed responsed mean values for the parameters a, b, c, d, e, f-1, f-2, g, h, I, j, k and l were 51±2.43, 47±4.32, 42±4.56, 53±5.00, 37±5.34, f-1=38±4.65, f-2=42±4.57, 55±3.22, 47±4.65, 56±4.66, 48±4.32, 47±4.21, and 41±5.49 respectively .

Cumulative results interview based 10 male respondents scores evaluation towards superstitions from Education Department AIOU-2020.

Belief	Odd/even	Lucky Person	Crossing Way	Carry Object	lucky No. Odd	Luckey number Even	Breaking Object	Astrology	Dreams Good/Bad	Group team work	Effect on daily activity	Luck in sports Bingo
475	445	425	370	530	490	530	440	470	510	370	425	480
47.5	44.5	42.5	37	53	49	53	44	47	51	37	42	48
65	56	60	55	60	70	75	60	65	70	55	60	65
30	35	25	25	30	30	25	25	30	25	25	25	30

Cumulative results interview based 10 female respondents scores evaluation towards superstitions from Education Department AIOU-2020.

Belief	Odd/even	Lucky Person	Crossing Way	Carry Object	lucky No. Odd	Lucky number Even	Breaking Object	Astrology	Dreams Good/Bad	Group team work	Effect on daily activity	Luck in sports Bingo
580	570	480	445	490	530	447	610	444	550	380	370	340
58	57	48	44.5	49	53	44.7	61	44.4	55	38	37	34
70	75	60	55	65	70	65	80	60	70	55	50	50
35	30	35	30	30	30	35	35	30	35	30	30	25

Cumulative results interview based male Teachers respondents scores evaluation towards superstitions from Education Department PMAS-AAU-2020.

Belief	Odd/even	Lucky Person	Crossing Way	Carry Object	lucky No. Odd	Lucky number Even	Breaking Object	Astrology	Dreams Good/Bad	Group team work	Effect on daily activity	Luck in sports Bingo
385	465	325	365	315	475	430	310	485	455	648	470	540
38.5	46.5	32.5	36.5	31.5	47.5	43	31	48.5	45.5	64.8	47	54
55	65	48	60	55	65	55	50	70	55	75	60	70
30	35	25	25	30	25	30	25	30	35	40	30	40

Cumulative results interview based female Teachers respondents scores evaluation towards superstitions from Education Department PMAS-AAU-2020.

Belief	Odd/even	Lucky Person	Crossing Way	Carry Object	lucky No. Odd	Luckey number Even	Breaking Object	Astrology	Dreams Good/Bad	Group team work	Effect on daily activity	Luck in sports Bingo
590	620	580	650	465	480	390	670	554	645	486	510	540
59	62	58	65	46.5	48	39	67	55.4	64.5	48.6	51	54
70	80	65	80	60	55	50	80	65	80	65	60	65
45	40	35	40	30	40	35	35	30	40	25	35	35

CONCLUSION:

After carrying out the complete study, the following conclusions have been arrived at :-

1. Superstitions beliefs were evidenced in graduate students with varying trend across gender.
2. Such beliefs were also evidenced in teachers, with mediocre trends at university level, across gender.
3. In addition to belief comparatively lower percentage of odd/even number in Male grad. Students while more percentage was recorded in female grad students.
4. Crossing way (by black cat) was recorded in female grad students towards luck with greater percentage than male grad students.
5. Carry object for luck, seeing a lucky person lucky numbers even/odd dreams (good/bad) and effect on daily working was evidenced with greater trends in female grad. Students as compared to lower trend of such beliefs for luck in male students.

RECOMMENDATION:

After successfully completing the study in the light of results and conclusions the following recommendation are made:-

1. As there had been evidence of superstitions beliefs existing in grad students and teachers at higher level, similar studies may also be carried out with larger quantum of students as well as teachers at higher level.
2. It is recommended that some of the superstitions beliefs recorded in the literature reviewed must also be included in further studies.
3. It is also recommended that exclusive studies be carried out in college students and high scholars across gender.

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