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Original research article

Pattern of Post Dural Puncture Headache Amongst Non-Obstetric Surgical Patients in JLNMCH, Bhagalpur, Bihar

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Abstract
The entire research defined the postural puncture headache within the non-obstetric patients in Bhagalpur through the epidemiological survey. It implies the basic problems and issues that can mention the probable chances to implement epidural catheter to reduce the chances of premature rupture. It includes the basic compositions of the medicine and the way it affects the patients as per the gender segregation. Study also implies the effect through time and duration of the pain and hypertensive nature of the pain with inclination of high blood pressure. Study includes proper justification and rationale to highlight the necessity of managing the issues and factors and the way it evaluates accurately.
Keywords: Amoxicillin, Anaesthesia, Ceftriaxone, Clavulanate, Epidermal Catheter Implementation, Epidemiology, Metronidazole, Non-Obstetric, Post Dural Puncture Headache, Prophylaxis

Introduction

Overview of the research topic

Post-dural puncture headache defines the physiological state where it occurs due to the lack of efficiency and negligence during the time of *anaesthesia*. Present study has been establishing the research thesis over the *epidemiology* of *post-dural puncture headache among the non-obstetric surgical people* to make a comparison with the *obstetric patient.* Study would define the issues regarding the *invasive* performances during the pregnancy and that it has changed the pattern before the delivery of the child. Researchers have raised the question regarding the *spinal headache or post-dural puncture headache* for multiple time invasion of the *anaesthesia* and association of the other comorbids.

Prior research

Research topic has the elaborated discussable domain where majority of the researchers have argued regarding the performances of the medical activities. The inefficiency of the medical surgery must have the consequence of getting a severe headache with sniffing and nausea after the *childbirth*[1].

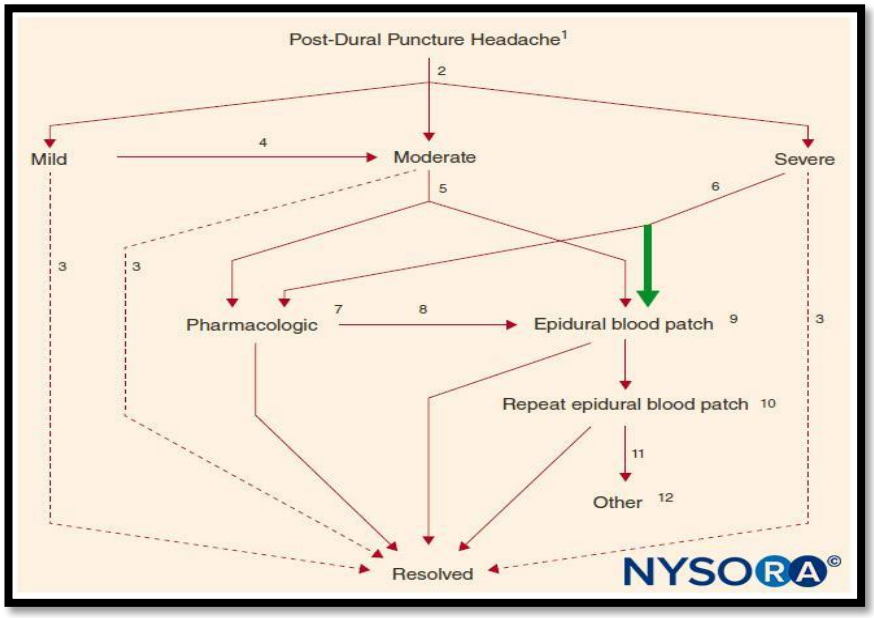

Figure 1: Research prior through skeletal structure[1]

It frequently happens for the patient who prefers to implement *epidural catheter treatment* before the *childbirth* to reduce the chances of *premature rupture of membranes (PROM)*[2]. It might develop the *epidemiology* within the patients to derive the basic ideas for the impact within the *obstetric and non-obstetric* performances within the pregnant women.

Rationale

***Post-dural puncture headache among the non-obstetric surgical people* is a unique and innovative research topic to discuss regarding the pattern of treatment and the way it differs.**

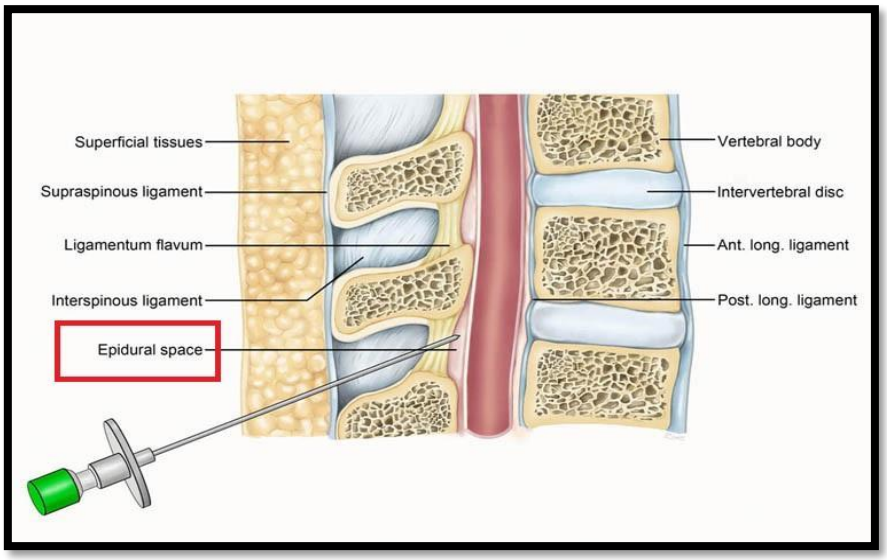

Figure 2: Source of anaesthesia and reaction with the additional body patterning[1]

Even *non-obstetric surgery* usually excludes *foetal surgery, caesarean delivery, surgery on the gestational uterus body and dilatation and curettage* for examining the other physiological characteristics[3]. It becomes important to analyse the frequency and chances to exhibit the pattern of *post-dural puncture headache among the non-obstetric women*.

Methodology

Research paper has assimilated *secondary information* for *thematic analysis* for observing the growth and enhancement of the *spinal headache* side effects.

Thesis statement

The report would exhibit the pattern of post-dural puncture headache within the non-obstetric patients in the Bhagalpurtertiary health institutions.

Outline

Research has focused on the Bhagalpurterritory area to observe the pattern of *post-dural puncture headache within non-obstetric women* through *qualitative data analysis.* It might assimilate the*quality of factors* to stigmatise the particular issues causing the uneasiness within the patients.

Materials and methods

Research type

Methodology is an important part for all of the research to highlight the utilisation of process and procedures for extracting the data from the definite research area. It becomes helpful to mention the pattern of data and the way it different the way of analysis and decision making for the hypothetical clarification. Present context has been exhibiting the *medical report over the epidemiology of frequency of the medicinal side effects.* By expanding the research methodology, the research area has been utilising *secondary methods* for collecting data on *post-dural puncture headache within the non-obstetric patients in the Bhagalpur tertiary health institutions.*

It might imply proper statistical presentation and *epidemiological* justification to highlight the differentiation between *Bhagalpurarea and global perspectives.* It would enrich the data structure for the entire research paper to mention the *thematic pattern* to describe the collected information. Study has to point out the valuable and exact factors behind the medicinal side effects before or after the *childbirth and ante partum*complications due to negligence of laboratories[4].

Data collection

Researchers have collected data from *medical journals and articles* to assimilate the authentic information from the medical reviews. They have also gathered information from *journals, articles on research methodology* with *peer-reviewed* confirmation of the last five years from 2017 to recent times. It also has focused on the *Bhagalpurarea and the empirical institutions* with internet searching and statistical justification. Research has also highlighted *e-journals, e-article, newspaper reports, medical magazines and medical websites* to collect information on the research topic.

Data analysis

Research has justified the process of *data analysis* through the definite ways to highlight the methods of data processing. It has highlighted thematic *analysis with secondary information* to follow up the factors important to the research topic. It has exhibited 3the data processing to justify the epidemiology and statistical frequency over the expansion of research topics in *Bhagalpurarea*. It has not directly connected the *quantitative data* where it has criticised and generated knowledge and ideas by the previous works of veteran researchers.

Research Equipments

Research has used *secondary data collection strategy* as the research equipment to extract information from the collected data. It has stigmatised the *qualitative data collection from journals, articles and web searching* which might help to enhance the factors. It has also implied the table, chart and graph analysis to extract information and derive a proper consequence of the entire research area. It has not refined the necessity of implementing the *SPSS, MS Project and PYTHON* because it has not calculated the *Primary data as well.*

Rationale

The reason behind taking themethodology is to highlight the definite procedures to collect data and extract important information. It has mentioned the necessity of *secondary data collection* because of saving the excess time consumption and complication. *Primary data* would take excess time and make the analysis complicated and it would not possible collect enormous *quantitative data.* For maintaining the limitations, research would exploit the *thematic analysis* with criticising the tables, charts and graphs to follow the pattern of epidemiology of *post-dural puncture headache within the noon-obstetric women in Bhagalpurareas.*

Results

The result shows the frequency and definite expansion of 4the headache type that varies within male and female and it triggers the age boundaries. The discussion of the entire study has to highlight the ***non-obstetric post-dural puncture headache*** that is different from the situation of the pregnant women.

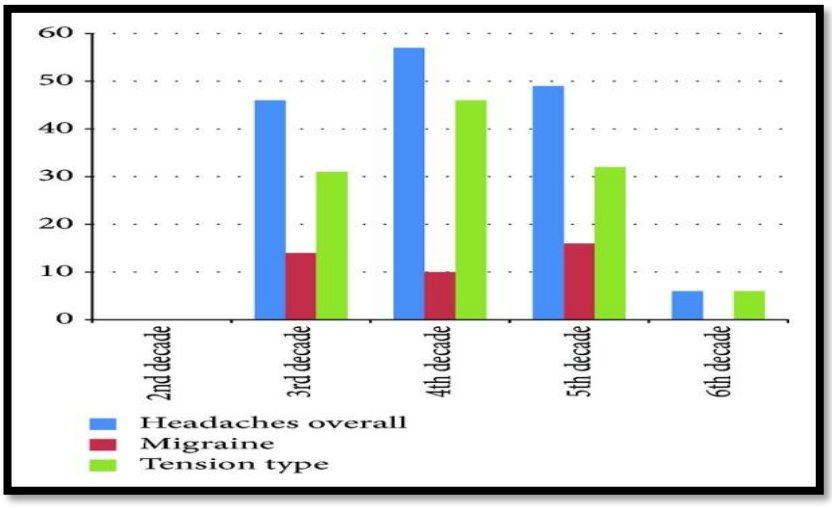

Figure 3: Types of headache after the anaesthesia[1]

The bar chart has been showing different colours which has stood for multiple patterns of headache within the *non-obstetric patients in Bhagalpur, India.* The blue colour has been signifying the overall headache with *nausea and insomnia.* The red colour has been justifying the *migraine effect with severe pain on the front facial areas.* Green colour has been clarifying the *headache of hypertension with high blood pressure on the occipital part of the brain.* It shows the higher level indicates the overall headache in the *4th decade* as the power of gender equality[5]. Graph has also expressed that the 6th decade has a lower number of overall headaches and hypertensive headaches amongst the entire population. In the case of migraine pain, it has stimulated the idea where it has exhibited the highest impact in the *5th decade* within the population of *Bhagalpur, India.*

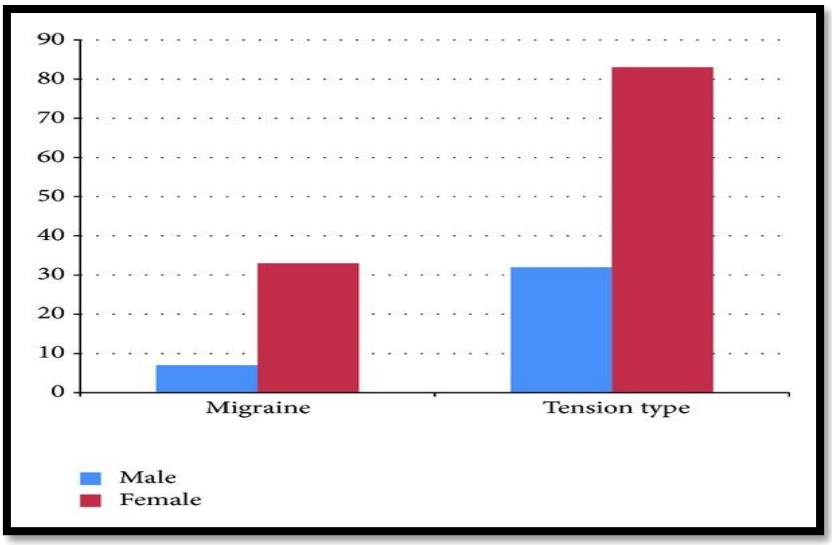

Figure 4: Pattern of headache as [per the gender segregation[1]

The bar graph has been showing the definite pattern of headache within the popu[lation as per the gender segregation. It has implied that the red colour has been justifying the pain within the female and the blue cookie has stood for the male. It has depicted two distinct types of headache such as *migraine and hypertensive headache* and hereby the pattern of epidemiology within the population[6]. Graph has expressed the highest value of the hypertensive headache within the female and lesser effect of migraine pain within the males. This might imply the biological and physiological components to justify the pattern of health issues and immunology to definite the impact of *post-dural puncture headache*.

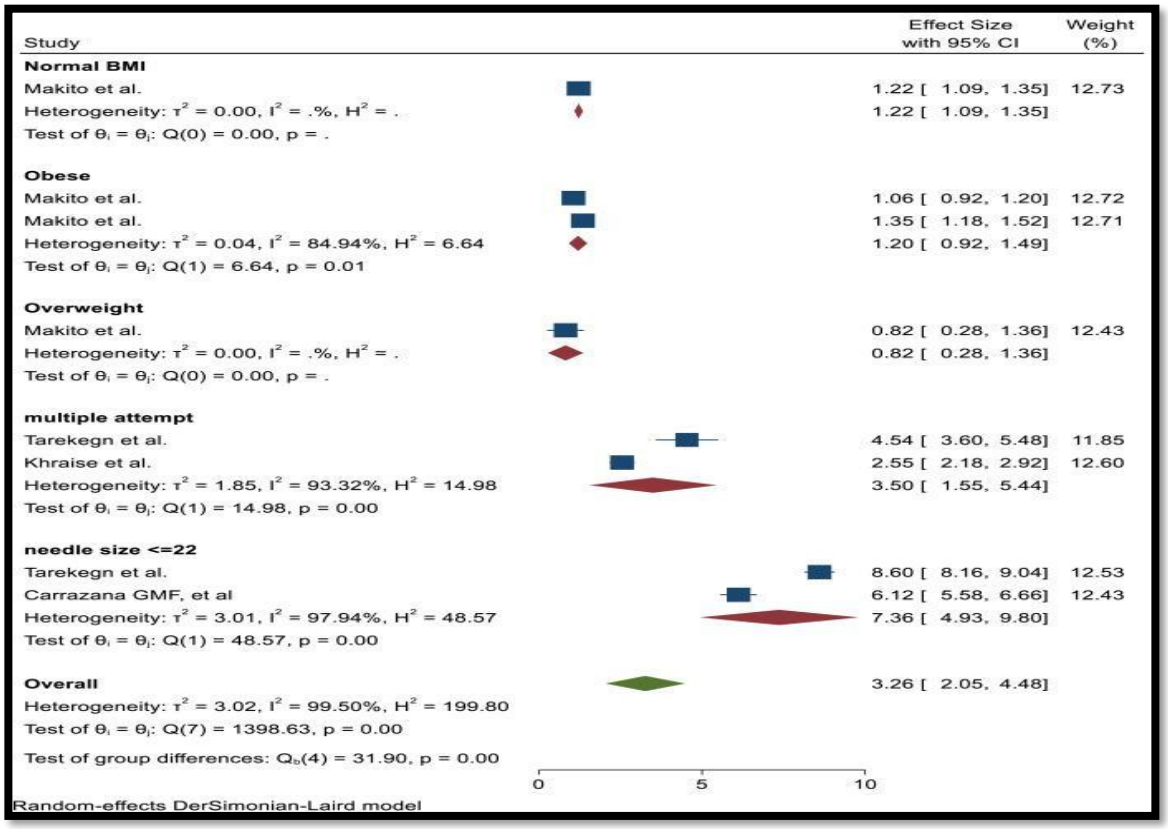

Figure 5: The impact of body size and pattern towards the post dural headache[1]

The table has been showing the pattern of body size and weight and the way it differs to mention the effect within the *non-obstetric patients* in Bhagalpur. Table has been clarifying the people (male and female) with *normal BMI, Obese and non-obese* to clarify the effect and the continuous frequency[7]. It has stated that the probability of the effect became higher within the people with normal *BMI* and lesser within the people with *non-obese.* It also has exhibited the needle size before *invasive aesthetic activities* to the *non-obstetric patients* in Bhagalpurarea. It has revealed the impact became higher for the needle size *<=22* and lesser for the multiple attempts to make the *local anaesthesia*[8]. It has implemented the idea towards the size of needle that has varied the impact of headache as per the gender boundaries and age liabilities.

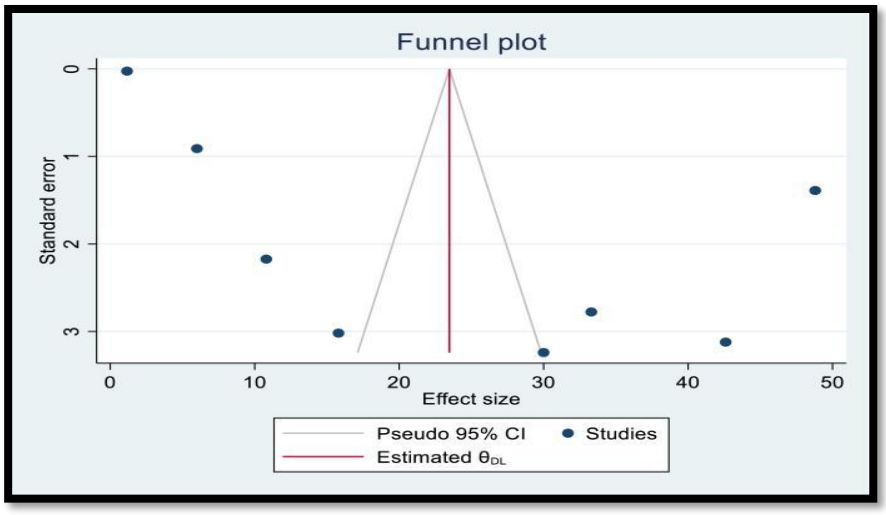

Figure 6: Funnel plotting to analyse the CI[1]

The ***funnel plotting*** has mentioned the impact of the ***adiposity within the non-obstetric patient*** by calculating the ***conicity index (CI)*** and the way it differs. In the upper chart, it has clearly expressed the pseudo probability of the ***CI*** that differs within 15 to 30 scaling[9]. The chances have implemented the possibilities up to ***95%*** of having the ***post-dural puncture headache within the non-obstetric patients*** in Bhagalpur[10]. The estimated value has developed the ideas to oppose the hypothesis and lessen the amount of adiposity to make the changes within the ***CI.*** It has been carrying the chances up to ***5%*** to modify the impact of the definite problems within the patients as well.

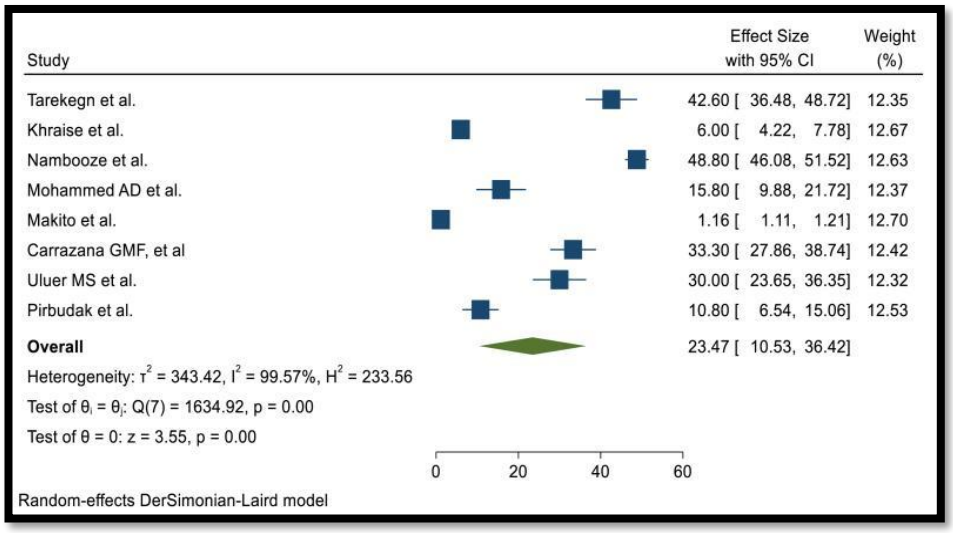

Figure 7: Variable affecting the analysis and probabilities of CI[1]

The table has created the constructivist idea regarding the value analysis, which might help to understand the possibilities to differ the ***CI*** calculations[11]. It maintains the impact of ***adiposity*** within the patients, which has been facing the effect of ***anaesthesia.*** In this above-mentioned context, researchers have to highlight the variable within ***probability and no probability of the CI*** among the patients having ***epidural catheter implementation***[12]**.** It has highlighted the chances are increasing the possibilities towards the effect of ***adiposity*** within the patients with lesser chances of changes. The ***θ value*** has been implementing the lesser value of changes in the case of ***non-obese people*** who have lack of ***adiposity***[13]. It might generate the overall idea to identify the impact on the patients with ***comorbids*** or women with ***pregnancy*** and not supporting due to the impact of diabetes and other ***non-communicable diseases***.

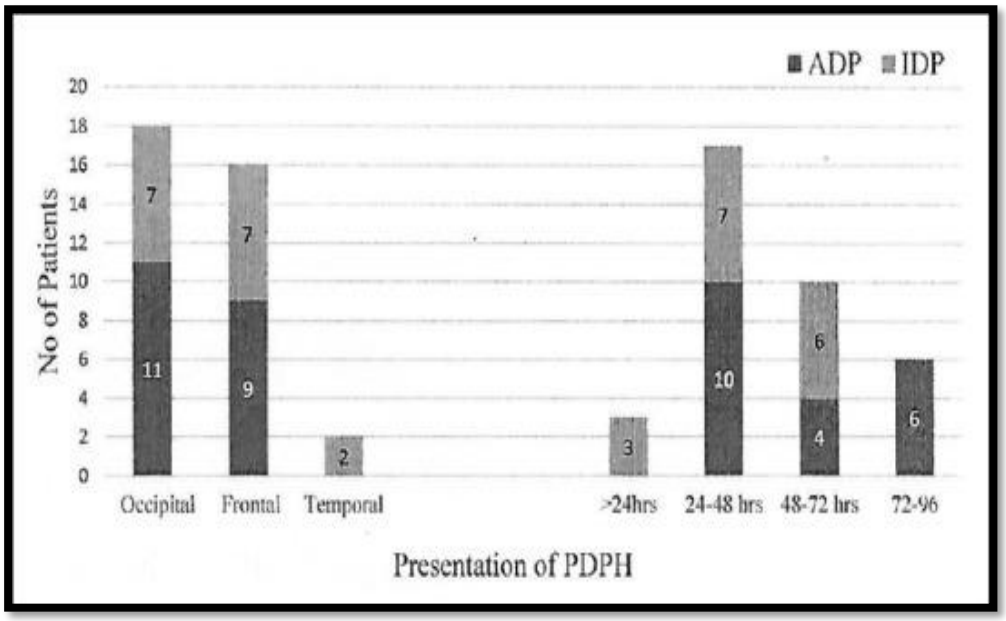

Figure 8: Non-obstetric patients with post dural puncture headache[1]

The image has been showing the number of patients with *post-dural puncture headache with non-obstetric treatments* within both male and females. The graph has been showing the areas of headache, which has also implied the association of time and the entire duration of pain[14]. Majority of the patients are suffering from *occipital headache,* which has been triggering the hypertensive nature of the patients[15]. The lesser amount of headache has stated the pain on the *temporal area of the brain, which has indicated the migraine pain*[16]. As per the analysis of time, it has shown that the duration has been continuing from *24 to 48 hours* with acute *nausea and loss of appetite*[17]. Lesser time duration has stood up to *72 to 96 hours* for exhibiting the massive amount of pain with acute *nausea*[18].

The black colour has been showing the impact of *Adenosine diphosphate (ADP)* and grey colour has been showing the impacts of *Intrinsically disordered protein (IDP)*[19]. Majority of the problem has been rising with the effect of *ADP* with lack of appetite and acute effect of *nausea.* Patients who are going to have the invasive medical treatment are having the lack of effects of *IDP,*as protein analysis would not affect the medicinal side effects.

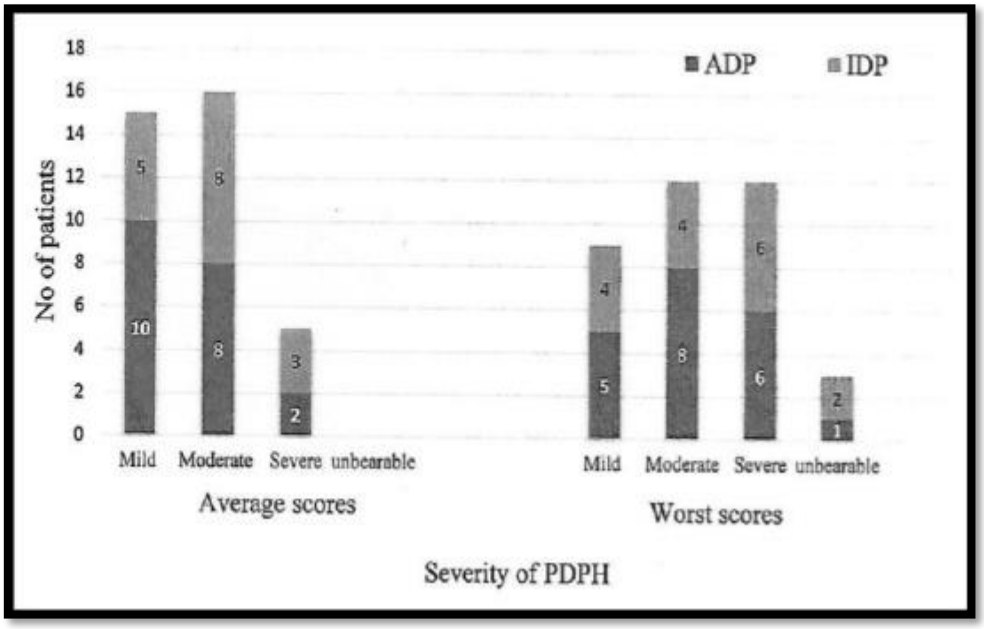

Figure 9: Non-obstetric patients with severity of post dural puncture headache[1]

The image has been showing the effect of the internal physiological components with the analysis of severity to justify the process of probability. In this context, the image has been showing the moderate impact or severity within the patients and lesser amount of unbearable pain within the patients. It occurs due to the impact of *ADP* as the medical component increases the quality of *ADP* component within the matrix[20]. It also has deposited the duration of pain that has spawned the higher value up to severe time consumption. It has mentioned the probable chances to highlight the definite pattern of the immunology and the body composition to control the protein analysis[21].

Study must have implemented the different impact, severity and epidemiology of the *post-dural puncture headache within the non-obstetric patients with different treatments* in JLNMCH Bhagalpur. Majority of the study has described the symptoms and the way it differs from male to female whereas it has not mentioned the age barrier as well. The graph and charts have given the proper idea regarding the impact of *Nausea and hypertensive headache* within the patients rather than migraine and overall pain[22]. The probable chance and post researches have highlighted the physiological value of the patients with definite mode of blood matrix composition. After the invasion of the anaesthesia, it would increase the *ADP* level within the blood that has triggered the high blood pressure within the patientsJLNMCH Bhagalpur.

Consequently, patients are facing *hypertensive headache for 24-48 hours* before taking the *antidote* to reduce the effect of *nausea.* Researchers have claimed that the impacts are *not age dependent* rather the probability has revealed that the problem is *body size and adiposity dependent with higher chances within the female*[24]. Majority of the Indian and JLNMCH Bhagalpurjournals have stated that women have the anaesthesia before pregnancy for multiple *non-obstetric* treatments and feel *nausea* after the *childbirth.*

Discussion

In the *figure 3,* it has mentioned the types of headache within the population according to the age group as well. It has mentioned that patients between the age group of *36.9 ± 7.9 years* are suffering from acute *hypertensive headaches. Figure 4* has implied that *72.8% females* have been suffering from hypertensive headaches where *39.3%* females are predominant[25]. On the

other hand, the *probability* has mentioned the value up to *(P < 0.0001)* for the overall headache types. It has also revealed that *80.4%* of patients did not go for the medical consultation where *19.6%* of patients go for doctors. The probability has implied the value up to *(P = 0.000)* where *83.9% females* consult the general physician and *16.1% females* consult *neurologists.*

Figure 5 and Figure 6 has been justifying the *Funnelling impact and the epidemiology of the body size and BMI* within the patients. It has revealed that *23.47%* patients are suffering with differences within the *BMI* that triggers the *conicity index calculation.* It has exhibited that the value of *BMI* differed within *3.26, 1.29 and 1.77* where the probability has shown the value up to *95% chances.* It has presented the issues with differences within the medical facilities in Indiaand Bhagalpurthat has affected the impact of the medicinal side effects. It has described that *32.4%* patients are suffering from the effect of *metronidazole, 27.5%* have been suffering from *ceftriaxone, 8.2%* are suffering from *amoxicillin + clavulanate* and *Indiamedical team* has used *surgical antibiotics prophylaxis* for *anaesthesia*[26]. The components are mentioning the consumption of medicines during the time of *anaesthesia,* whichaffects the patients with different *BMI.*

Figure 7 and Figure 8 have mentioned the effect of *ADP and IDP* that have reacted within the matrix to enhance the chances of the hypertensive headache within the patients. It has revealed that *25% patients* are suffering from the effect of *ADP* where *3.9%* patients are suffering from the effect of *IDP.* It has also ensured that the oral consumption of *pregabalin 75 mg* within the *non-obstetric patients* in*Bhagalpur, India*causes *postural issues and headache*.

The research analysis also implies the severity as per the age group and gender segregation, which also fits for the further calculation of the epidemiological survey. It has revealed that ± *58.0* is the mean age group to highlight the impact of the severity where *55.9%* patients are showing the odd ratio as well. Apart from that, it has also depicted the severity through the implementation of *intrathecal catheter* where *55.2% - 25.0%* patients are showing the value of *probability up to* 95% with the *CI* value of up to *3.7*[27]. It has given the different value of association where severity has not depended on the *adiposity* within the patients of Bhagalpur, India. It has enhanced the value of the *conicity index* of up to *1.2–11.2* when the value of *probability* has mentioned up to *(P=0.02).*

The statistical analysis of *Figure 8* has expressed that *23.47%* patients with *normal BMI* irrespective of gender segregation are not facing any issues through the entire *ADP severity*[28]. The analysis of the entire result has implemented the *95% confidence* for the probable chances to highlight the impact of the *POR* within the females in *Indian* with *hypertensive headache*[29]. Probabilities have been of up to *1.22* unlike it has observed the differentiation within the *PPDH* such as *1.09, 1.35.* Medical teams of *India*has implied the over impact of the *post-dural puncture headache* would increase the value of up to *3.50* where it would make the dissimilar and abnormal pattern of estimated values of up to *1.55, 5.44*[30].

The study must have the necessity to understand the definite probabilities to mention the co morbid within the patients who are actually suffering from the issues. It has highlighted the pattern of changes within the patients and it changes due to the different body compositions. It has implemented the body composition diversifying within the females as they have the oral consumption of the medicines as well.Additionally, it makes changes within the calculations and brings the concept of anonymity within the epidemiology.

Conclusion

Research study has mentioned the probabilities to highlight the areas to justify the impact of medicinal components through the entire treatment. In this context, researchers have limited their areas to study the *postural headache within the non-static points within the JLNMCH Bhagalpur, India.* It has claimed the pout up the gender segregation and patterning of consuming the anaesthetic medicines before the treatments. In the other cases, study has mentioned the mean age value where the entire *post-dural puncture headache severity* has not been age-dependent. It has mentioned the chances of body size and pattern, which has directly affected the chances of severity. Research has revealed the different pattern of headache within the females because of the *epidermal catheter implementation* at the time of gestational period. Study has clearly described the *probabilities* to mention the effects within the entire population through the inclination towards high blood pressure and *hypertensive headache.*

References

1. Alizadeh R, Aghsaeifard Z, Fereydoonnia B, Hashemi M, Mostafazadeh M. Prone position: A possible method to decrease post dural puncture headache (PDPH) during surgery. Annals of Medicine and Surgery. 2022 Feb 1; 74:103277.
2. Ciechanowicz S, Setty T, Robson E, Sathasivam C, Chazapis M, Dick J, Carvalho B, Sultan P. Development and evaluation of an obstetric quality-of-recovery score (ObsQoR-11) after elective Caesarean delivery. British journal of anaesthesia. 2019 Jan 1; 122(1):69-78.
3. Costa AC, Satalich JR, Al-Bizri E, Shodhan S, Romeiser JL, Adsumelli R, Abola RE, Steinberg ES, Bennett-Guerrero E. A ten-year retrospective study of post-dural puncture headache in 32,655 obstetric patients. Canadian Journal of Anesthesia/Journal canadien d'anesthésie. 2019 Dec; 66(12):1464-71.
4. Denis Dupoiron MD, Sanjeet Narang MD, Valerie Seegers MD, Nathalie Lebrec MD, François Boré MD, Virginie Jaoul MD, Marie Pechard MD, Sabrina Jubier Hamon MD. Preventing post dural puncture headache after intrathecal drug delivery system implantation through preventive fibrin glue application: a retrospective study. Pain Physician. 2021 Mar; 24:E211-20.
5. Dźwigoł H, Dźwigoł-Barosz M. Scientific research methodology in management sciences. Financial and credit activity problems of theory and practice. 2018 Jun 29; 2(25):424-37.
6. Halalmeh DR, Sandio A, Adrian M, Moisi MD. Intracranial Subdural Hematoma versus Postdural Puncture Headache Following Epidural Anesthesia: A Case Report. Cureus. 2022 Feb 1; 14(2).
7. Jespersen MS, Jaeger P, Ægidius KL, Fabritius ML, Duch P, Rye I, Afshari A, Meyhoff CS. Sphenopalatine ganglion block for the treatment of postdural puncture headache: a randomised, blinded, clinical trial. British Journal of Anaesthesia. 2020 Jun 1;124(6):739-47.
8. Khajavi MR, Alavi F, Moharari RS, Etezadi F, Imani F. Evaluation of acute and chronic back pain after spinal anesthesia in midline and paramedian approach: Incidence and functional disability. Archives of Anesthesiology and Critical Care. 2018 Sep 11;4(4):535-7.
9. Khoshnaw SH, Shahzad M, Ali M, Sultan F. A quantitative and qualitative analysis of the COVID–19 pandemic model. Chaos, Solitons & Fractals. 2020 Sep 1;138:109932.
10. Kumar CB, Jha AK. Incidence of Post Dural Puncture Headache (PDPH) Following Subarachnoid Block with 25G & 27G Quincke Spinal Needles in Patients Posted for lower Abdominal Surgery. Journal of Medical Science and Clinical Research, https://dx. doi. org/10.18535/jmscr/v8i7. 2020;9.
11. BhagalpurHealth Care Facilities (Primary, Secondary and Tertiary) Internet]. 2020. [Cited 2020 June 15]. Available from: https://grid3.gov.ng/

12. Lan Wu MD, Shouming Chen MD, Yan Cheng BD. Opioids for the prevention of post-dural puncture headache in obstetrics: A systematic review and meta-analysis of efficacy and safety. Pain Physician. 2021 Nov; 24:E1155-62.
13. Mohajan HK. Qualitative research methodology in social sciences and related subjects. Journal of Economic Development, Environment and People. 2018;7(1):23-48.
14. Moore AR, Wieczorek PM, Carvalho JC. Association between post–dural puncture headache after neuraxial anesthesia in childbirth and intracranial subdural hematoma. JAMA neurology. 2020 Jan 1;77(1):65-72.
15. Newman M, Gough D. Systematic reviews in educational research: Methodology, perspectives and application. Systematic reviews in educational research. 2020:3-22.
16. Ogunleye OO, Oyawole MR, Odunuga PT, Kalejaye F, Yinka-Ogunleye AF, Olalekan A, Ogundele SO, Ebruke BE, Kalada Richard A, Anand Paramadhas BD, Kurdi A, Sneddon J, Seaton A, Godman B. A multicentre point prevalence study of antibiotics utilization in hospitalized patients in an urban secondary and a tertiary healthcare facilities in Nigeria: findings and implications. Expert Rev Anti Infect Ther. 2022 Feb;20(2):297-306. doi: 10.1080/14787210.2021.1941870. 2021 Jun 21.
17. Oliveira JP, Mendes NT, Martins ÁR, Sanvito WL. Cerebrospinal fluid: history, collection techniques, indications, contraindications and complications. Jornal Brasileiro de Patologia e Medicina Laboratorial. 2020 Nov 13;56.
18. Oshinaike O, Ojo O, Okubadejo N, Ojelabi O, Dada A. Primary headache disorders at a tertiary health facility in Lagos, Nigeria: prevalence and consultation patterns. Biomed Res Int. 2014;2014:782915. doi: 10.1155/2014/782915. 2014 Jan 23.
19. Postdural Puncture Headache [Internet]. 2020. [Cited 2020 June 15]. Available from:https://www.nysora.com/topics/complications/postdural-puncture-headache/https://www.nysora.com/topics/complications/postdural-puncture-headache/
20. Rafique MK, Taqi A. REVIEW ARTICLE–The causes, prevention and management of post spinal backache: an overview. Anaesthesia, Pain & Intensive Care. 2019 Jun 28.
21. Reno JL, Cook MI, Kushelev M, Hayes BH, Coffman J. Cesarean Delivery in a Patient With Body Mass Index Over 100: Continuous Spinal Anesthesia in Two Consecutive Deliveries. Cureus. 2021 Jun 14;13(6).
22. Sakamoto S, Putalun W, Vimolmangkang S, Phoolcharoen W, Shoyama Y, Tanaka H, Morimoto S. Enzyme-linked immunosorbent assay for the quantitative/qualitative analysis of plant secondary metabolites. Journal of natural medicines. 2018 Jan;72(1):32-42.
23. Salzer J, Granåsen G, Sundström P, Vågberg M, Svenningsson A. Prevention of post-dural puncture headache: a randomized controlled trial. European Journal of Neurology. 2020 May;27(5):871-7.
24. Shah K, Abdeljawad T, Mahariq I, Jarad F. Qualitative analysis of a mathematical model in the time of COVID-19. BioMed Research International. 2020 May 25;2020.
25. Snyder H. Literature review as a research methodology: An overview and guidelines. Journal of business research. 2019 Nov 1;104:333-9.
26. Solhpour A. Prolonged post-dural puncture headache and higher concentrations of prolactin: is there an association? Comment on Br J Anaesth 2021; 127: e204–e205. British Journal of Anaesthesia. 2022 May 1;128(5):e310-1.
27. Southerland WA, Hasoon J, Urits I, Viswanath O, Simopoulos TT, Imani F, Karimi-Aliabadi H, Aner MM, Kohan L, Gill J. Dural Puncture During Spinal Cord Stimulator Lead Insertion: Analysis of Practice Patterns. Anesthesiology and Pain Medicine. 2022 Apr 30;12(2).
28. Spinal Headache [Internet]. 2020. [Cited 2020 June 15]. Available from:https://www.mayoclinic.org/diseases-conditions/spinal-headaches/symptoms-

causes/syc-20377913https://www.mayoclinic.org/diseases-conditions/spinal-headaches/symptoms-causes/syc-20377913
29. Spinal Headaches [Internet]. 2020. [Cited 2020 June 15]. Available from:https://my.clevelandclinic.org/health/diseases/17927-spinal-headacheshttps://my.clevelandclinic.org/health/diseases/17927-spinal-headaches
30. Statement on Post-Dural Puncture Headache Management [Internet]. 2020. [Cited 2020 June 15]. Available from:https://www.asahq.org/standards-and-guidelines/statement-on-post-dural-puncture-headache-managementhttps://www.asahq.org/standards-and-guidelines/statement-on-post-dural-puncture-headache-management
31. The Impact of Increased Body Mass Index on the Incidence and Severity of Post-spinal Headache after Cesarean Section [Internet]. 2020. [Cited 2020 June 15]. Available from: https://www.jrmds.in/articles/the-impact-of-increased-body-mass-index-on-the-incidence-and-severity-of-postspinal-headache-after-cesarean-section-18173.htmlhttps://www.jrmds.in/articles/the-impact-of-increased-body-mass-index-on-the-incidence-and-severity-of-postspinal-headache-after-cesarean-section-18173.html
32. Toledano RD, Leffert L. What's new in neuraxial labor analgesia? Current Anesthesiology Reports. 2021 Sep; 11(3):340-7.
33. Zangirolami-Raimundo J, Echeimberg JD, Leone C. Research methodology topics: Cross-sectional studies. Journal of Human Growth and Development. 2018; 28(3):356-60.

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