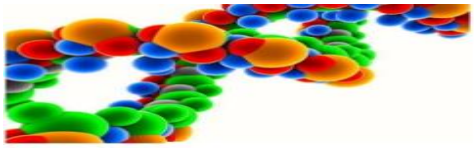
(PART 1)

SUMMER INTERNSHIP

AT



DelCure LifeSciences Ltd.

Date: 1st April 2020 – 1st June 2020

A Report On: **To Find out the Preference of Dosage form of Vitamin D3 among Orthopedic and General Physician.**

Submitted by – Aeman Shaikh

MBA in Pharmaceutical Management (2019-21)

Under the Guidance of

Dr. Saurabh Kumar Banerjee

(Dean, School of Pharmaceutical Management)

IIHMR UNIVERSITY

Indian Institute of Health Management Research

Jaipur Rajasthan (India)

Phone: 91-141-3924700 email: https://www.iihmr.edu.in/

CONTENT

TABLE OF GRAPHS

ACKNOWLEDGEMENT

Well I take this opportunity with pride & enormous gratifications to express gratitude from the core of my heart to all individual who support us directly or indirectly throughout learn lush phase during the materializations of the Project.

The success and final outcome of Summer Internship Project, required a lots of guidance and assistance many peoples and I am extremely privileged to have got this all along the completion of my summer internship project. All I have done is only due to such supervision and assistance and I would not forget to thanks them.

I thank to IIHMR UNIVERSITY for providing us an opportunity to do this summer training project and giving me all support and guidance which make me to complete this training. I am extremely thankful to DELCURE LIFESCIENCES to giving me this opportunity and choose me as intern at their company. I am also thanking to teaching and nonteaching staff of SPM faculty for providing such a nice & grateful support & guidance.

At the very commencement, with a great veneration and immense glee to express my deep sense of admiration to our adorable guide **Dr. Saurabh Kumar Banerjee**, Dean of Department of Pharmaceutical Management, whose encouragement and affirmative criticism and providing all the necessary facilities for the completion and guided me in all along, till the completion of my summer internship project by providing me all the necessary information, and also given full bloom to this research work.

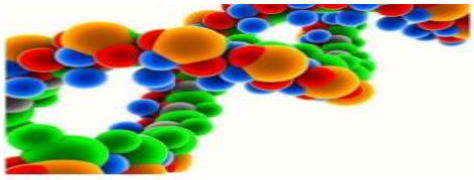
With great pleasure I express my most cordial, humble and grateful thanks to **Mr. Harishankar Sahu**, Senior Product Executive at (DelCure LifeSciences) for giving opportunity to do this research work and also for inspiration and valuable suggestions.

I sincerely extend my gratitude to all the faculty member of department of Pharmaceutical Management for their timely help & support during this course of Summer Training.

I would also like to thank to the doctors who given their precious time and support in my summer internship project.

Aeman Shaikh

About Organization Profile



DelCure LifeSciences Ltd.

ABOUT DELCURE

DelCure LifeSciences Ltd. (DLL) is one of the fastest growing Indian pharmaceutical company, headquartered in Mumbai. DLL was established in year 2013 with an objective to bring innovative and high-quality medicines.

Our technology backed innovative medicines ensures the health and wellbeing of people around the country. Every DelCure Medicines and service is a testament to its uncompromising quality standards. All

products are manufactured in facilities that are approved by major global regulatory agencies including the USFDA, ISO2009, ANVISA and more.

Being a healthcare centric and innovation driven company we want to be valued not only for pharmaceutical product but also for the way we serve our patients and healthcare professionals.

VISION

"To become the most respected, uniquely positioned leading pharmaceutical company in the chosen areas or specialty verticals in India and abroad with distinct value-based characteristics."

HAPPINESS

DelCure's purpose is to spread Happiness at every corner around the world by bringing technology backed innovative medicines.

HELPFULNESS

DelCure's culture is helpfulness, we address all unmet needs of our patients for better wellbeing.

TRUTHFULNESS

DelCure's values is truthfulness, we are committed to provide best quality medicine for the larger benefit of the community.

OUR PRIMISE

Our objective is to benefit our customers with our in-depth understanding of the market, technical expertise in products and the ability to combine it with commercial know-how, since the base of our innovation is our client's need and requirement.

- Bringing Innovative medicine within reach
- Delivering Excellence Beyond Expectations
- Addressing unmet patient needs

1.1 BACKGROUND

Vitamin D plays an essential role in bones & minerals & metabolism. It's also important in non-skeletal tissue, and its deficiency is closely associated with increasing the risk of cancer, infection, autoimmune diseases & cardiovascular diseases, also in diabetes mellitus.

Such patient with Vit. D deficiency who were given a high dose Vit. D2 injection (300,000IU) combined with the usual daily oral supplements of calcium (1.2 g) and vitamin D3 (800 IU) reported that high dose Vitamin D is increased 1,25(OH)2D and FGF23 concentration.

Also it is naturally made by the body when it comes to contact with sunlight.

Thus the vitamin D3 medication has usually no side effects. But taking too much of vitamin can also increase high calcium level.

This drug include a Phosphate binders which can cause Drug interaction.

The overdose of this drug can causes the serious symptoms such as the passing out or trouble in breathing.

MAINLY IN WHAT CONDITION IT IS USED:

- Low level of parathyroid hormone
- Osteomalacia
- Softening of bones
- Rickets
- In condition of weak bones
- Low level of Vit. D
- Generalize change in bones associated with renal failure
- Softening of bone from seizure medication

1.2 LITERATURE REVIEW:

→Effects of High-Dosage of Vit. D3 Intake on Ambulation's, Muscular Pain and Bone Minerals Density in a Woman's with a Multiple Sclerosis: A 10-Year Longitudinal Case Report

Article by: Barbara .M. van Amerogen & Francois Feron

Mounting evidence correlate Vit. D3 (cholecalciferol) supplements or higher serum level of Vit. D (25(OH)D) with the lower risk of developing multiple sclerosis (MS), reduced relapses rate, slower progression or fewer new brain lesion. Here present the case of a woman who was diagnosed with MS in 1990. From 1980 to 2000, her ability to walk decreasing from ~20 to 1 km per day. The starting dose was 20 mcg (800 IU)/day and escalate to 100 mcg (4000 IU)/day in September 2004 and then to 150 mcg (6000 IU)/day in December 2005. Vit. D3 intake reduced muscular pain and improved ambulation from 1 (February 2000) to 14 km/day (February 2008). Bowel problem in MS may need to be addressed as they can cause malabsorptions including calcium, which may increase serum PTH and 1,25(OH)2D level, as well as bone losses. We suggests that periodic

assessments of Vit. D3, calcium and magnesium intake, bowel problem and the measurement of serum 25(OH)D, PTH, Ca level, UCa/Cr and bone health become part of the integral management of person with MS.

→ High-dosage of Oral Vit. D3 Supplementations in the Elderly

Article by: C J Bacon, G D Gamble, A M Horne, M A Scott, I R Reid.

Abstract: Daily dosage with Vit. D which fail to achieve optimal outcomes, and it is uncertain what the targeted the levels of 25-hydroxyvitamin D should be, this study found that large loading dose of vitamin D(3) rapidly and safely normalize 25OHD level, and that monthly dosing is similarly effective after 3-5 months & With baseline 25OHD > 50 nmol/L, Vit. D supplementation does not reduce PTH levels.

Large loading doses of Vit. D (3) rapidly and safely normalize 25OHD level in the frail elderly. Monthly dosing is similarly effectives and safe, but takes 3-5 months for plateau 25OHD level to be reached.

→ Study on: Design and Rationale for an Exploratory Phase II Randomized Controlled Trial to Determine Optimal Vit. D_3 Supplementation Strategies for Acute Fracture Healing

Article by: Sheila Sprague, Sofia Bzovsky, Daniel Connelly, Lehana Thabane, Jonathan D Adachi, Gerard P Slobogean.

Abstract: Observational study have found that 75% of healthy adult fracture patients (ages 18-50) have serum 25-hydroxyvitamin D (25(OH)D) level < 30 ng/mL. Although lower serum 25(OH)D level have yet to be correlated to fracture healing complications or poor fractures outcome & many orthopedic surgeons are routinely prescribing Vit. D supplements to improve fractures healing in healthy non-osteoporotic patients Study result will be disseminated through a publications in an academic journal and presentation & at orthopedic conference.

Study result will inform dose selection for a large definitive randomized controlled trials & provide preliminary clinical data on which dose may improve acute fracture healing outcomes in healthy adult patients (18-50 years) at 3 months.

1.7 OBJECTIVE: The study objective is To Find out the Preference of Dosage Form of Vitamin D3 among Orthopedic and General Physician.

1.7 RESEARCH METHODOLOGY:

- **1.4.1 Research Type:** Quantitative Study.
- **1.4.2 Collection of Data:** Primary data was collected by the respondent doctors by quantitative interview, and also online by Google form, and the Secondary data will be collected from the published journals, articles.
- **1.4.3 Duration:** 60 day
- **1.4.4 Sample Size:** The sample size of the respondent doctors are of 200.
- **1.4.5 Tools:** Structured Questionnaire
- **1.4.6 Method:** The survey conducted by the online Google form and also I visited to the doctor's clinic.

1.5 QUESTIONNAIRE FOR THE SURVEY:

Dr Name: - ----------

Specialty: - ----------

Qualification: - ----------

Contact: - ----------

Place: - ----------

Date: - ----------

1. **Do you prescribe Vitamin D3?**
    - **Yes**
    - **No**

2. **If no, then why?**

3. **If yes, do you prescribe Vitamin D3 Injection?**
    - **Yes**
    - **No**

4. **If no, then what restricts you to use Vitamin D3 Injection?**

5. **If yes, then what are the major indications in which you prescribe D3 Injection?**

6. **Dose you usually prefer for Vitamin D3 Injection?**
    - **60000 IU**
    - **1L IU**
    - **3L IU**
    - **6L IU**

7. **How long you prescribe Vitamin D3 Injection (Therapy duration)? (example: 6L IU once in a month for 6 months)**
8. **How many patients do you prescribe Vitamin D3 Injection in a month?**

9. **What changes you want in a formulation / presentation to increase your usage of Vitamin D3 Injection?**

10. **Any other comments / suggestions?**

1.6. DATA ANALYSIS & INTERPRETATION:

The feedback response are calculated in percentage and interpreted by using Pie Chart and Bar Graphs.

- **Do you prescribe Vitamin D3?**

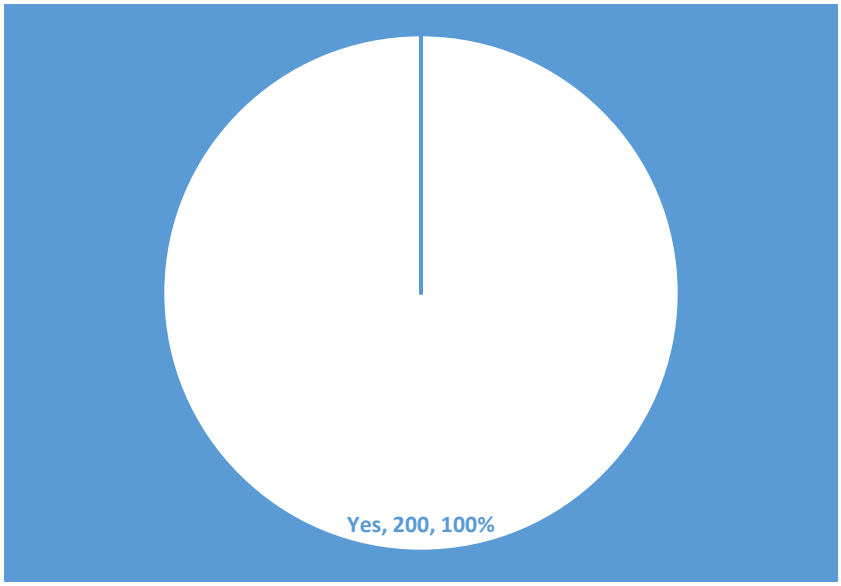


Figure 1.6.1

Interpretation: The above figure 1.6.1 shows the response of General Physician & Orthopedic doctors. As shown graph the 100% ratio for prescribing the Vitamin D3.

- **If yes, do you prefer Vitamin D3 Injection?**

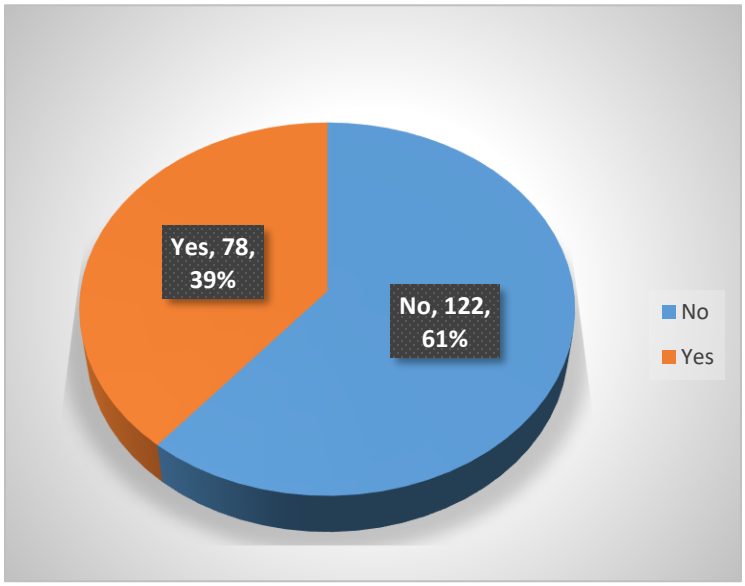


Figure 1.6.2

Interpretation: The above Pie charts exhibits the preference of the Vitamin D3 injection. As we can see the maximum ratio for not prescribing the Vit. D3 injection is of 61% & only 39% of doctors are prescribing Vit. D3 injection.

- **If no, then what restricts you to use Vitamin D3 Injection?**

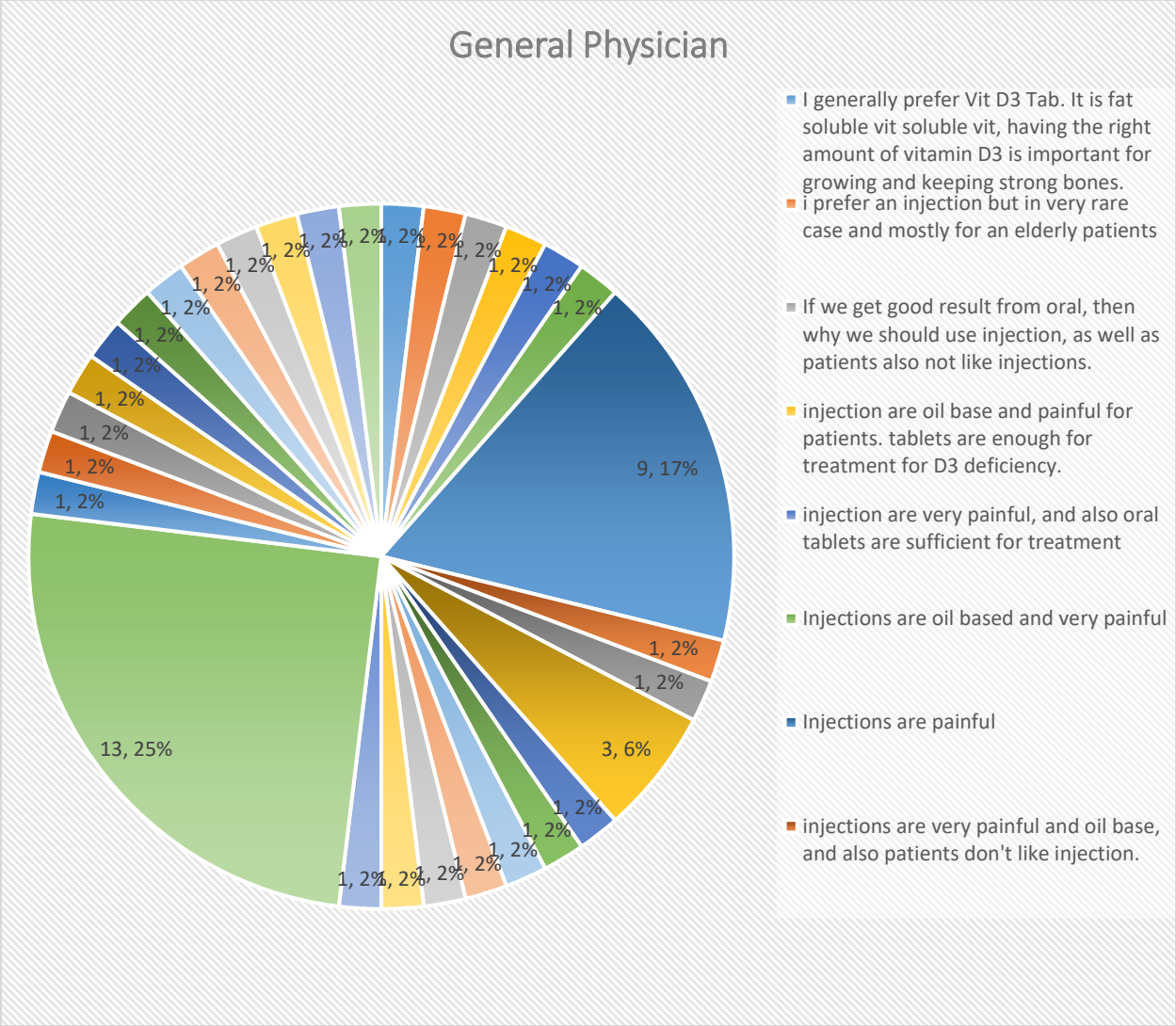


Figure 1.6.3 (A)

Interpretation: In the above figure shows that why doctors are not prescribing the Vitamin D3 injection thus, 25% doctors are not prescribing because they said that “Oral medicines are preferable” & the 17% doctors are said that “ Vitamin D3 Injection are very painful” Also the doctors said that injection are oil based and very painful so they not prescribing the injection.

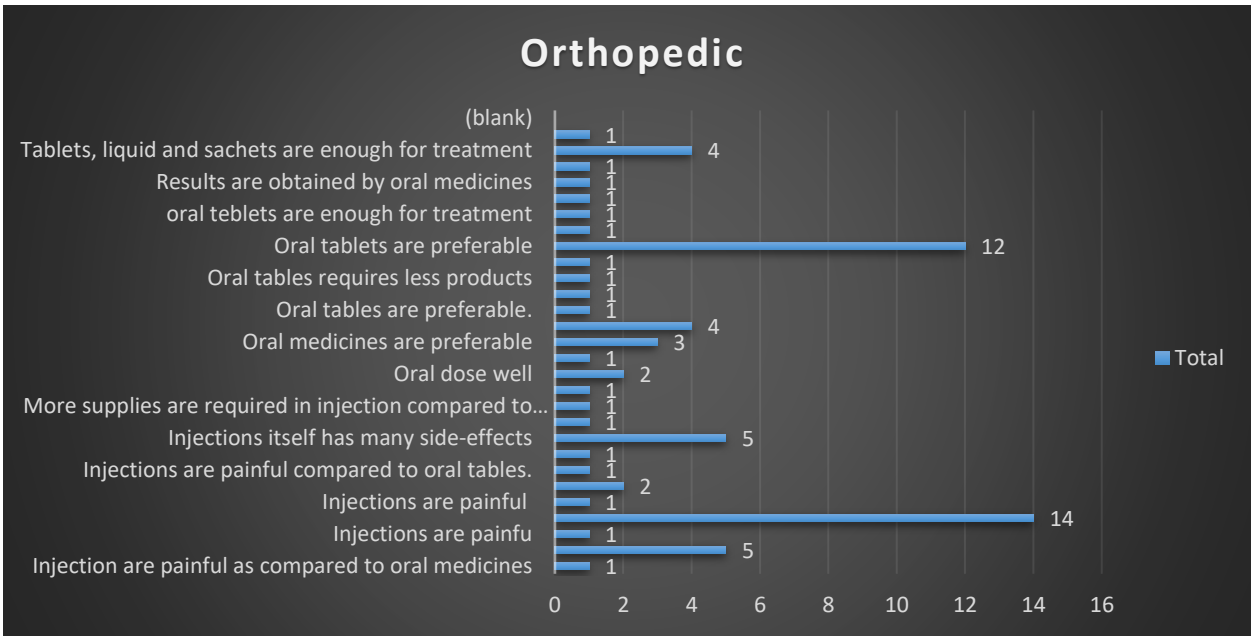
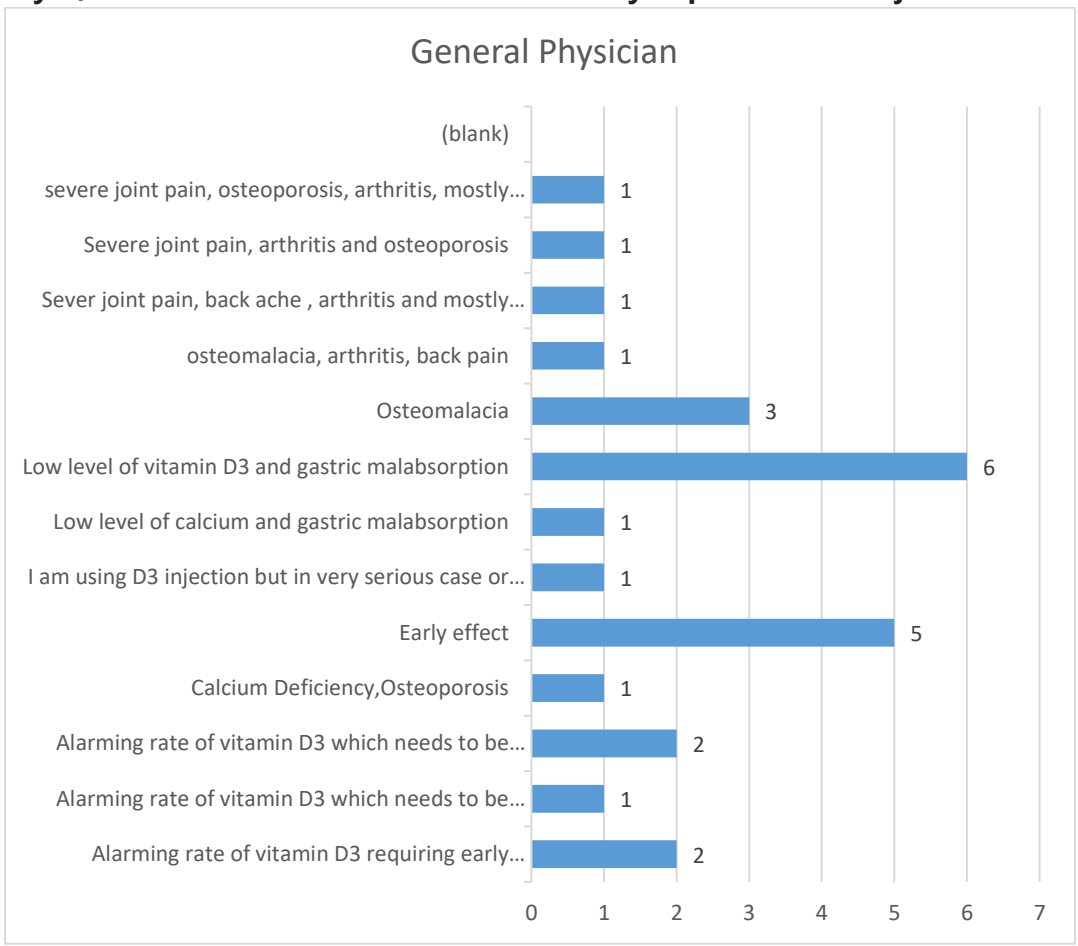


Figure 1.6.3 (B)

- **If yes, then what are the indications in which you prescribe D3 Injection?**



1.6.4 (A)

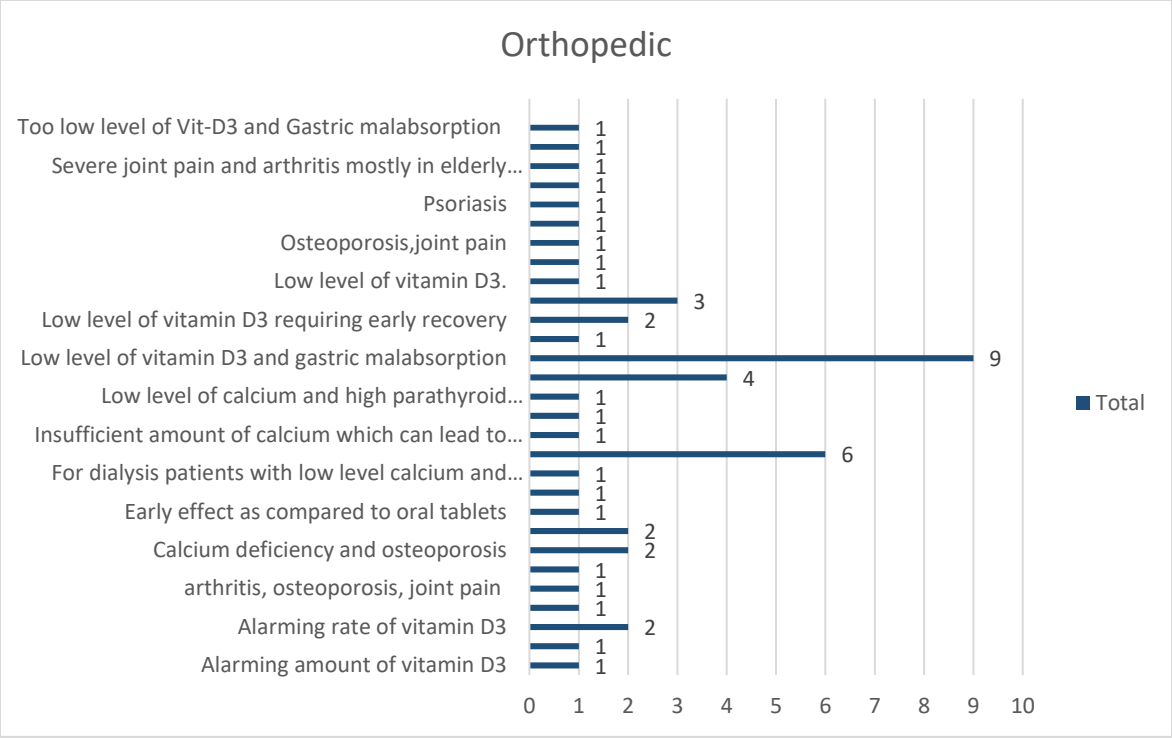


Figure 1.6.4 (B)

Interpretation: In both the figure they highest ratio of using Vitamin D3 Injection is for Low level of vitamin D3 & also if we see the maximum usage of the Vitamin D3 injection is for Arthritis, Osteoporosis, Severe Joint Pain etc.

- **Dose you usually prefer for vitamin D3 Injection?**

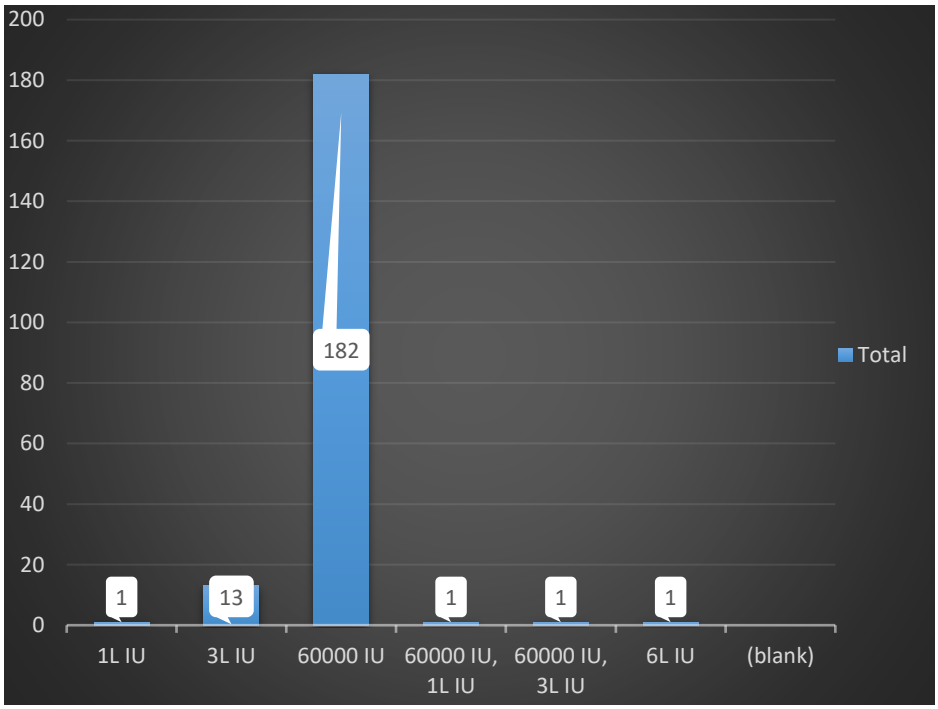


Figure 1.6.5

Interpretation: As shown in the above graphs that the maximum doctors can prefer 60000 IU injection form for patients. They prescribe very rarely the 3L IU or 1L IU.

- **How long you prescribe Vitamin D3 Injection (Therapy Duration)?**

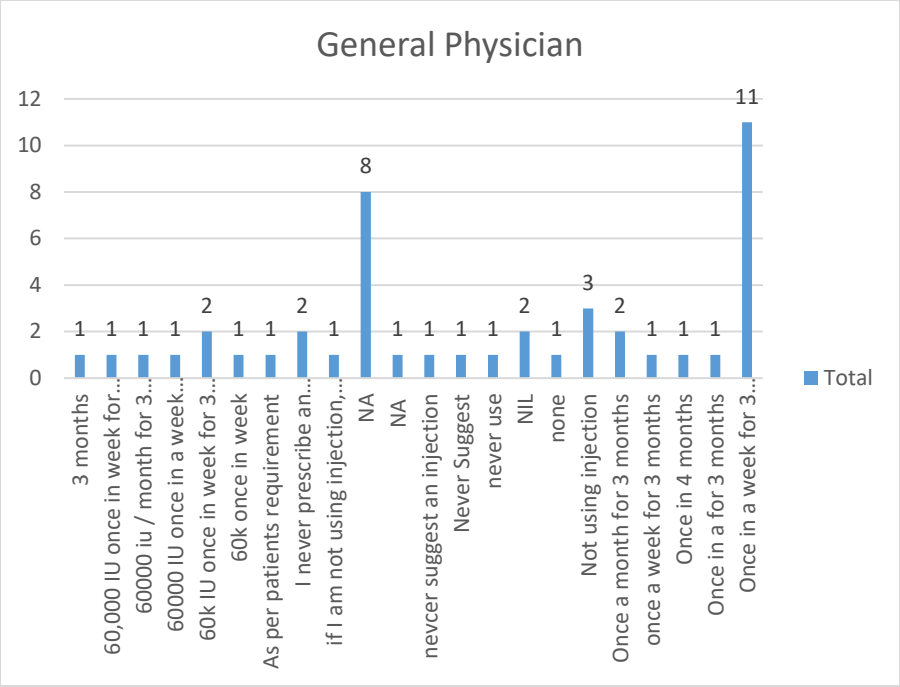


Figure 1.6.6 (A)

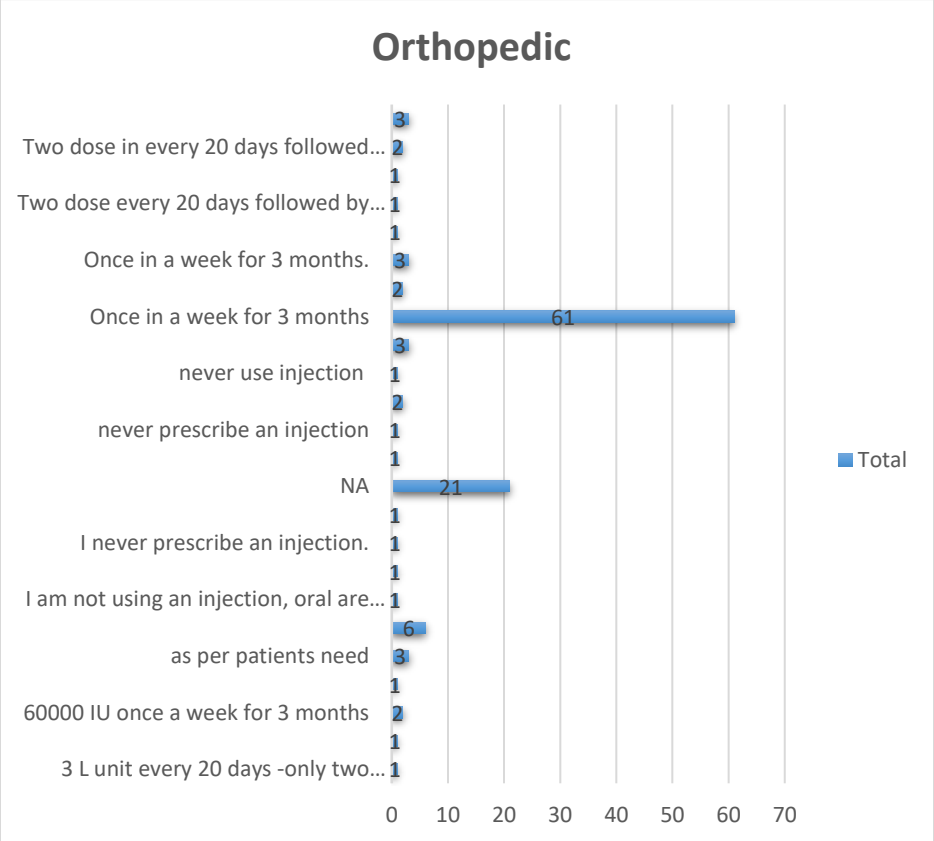


Figure 1.6.6 (B)

Interpretation: In the above both graph shows the maximum ratio of the Therapy Duration is for “60000 IU once in week for 3 months” & also some of the doctors are response that the therapy is also depends “as per patients requirement” & also some of them are response that they “never prescribe the injection”.

- **How many patients do you prescribe Vitamin D3 injection in a month?**

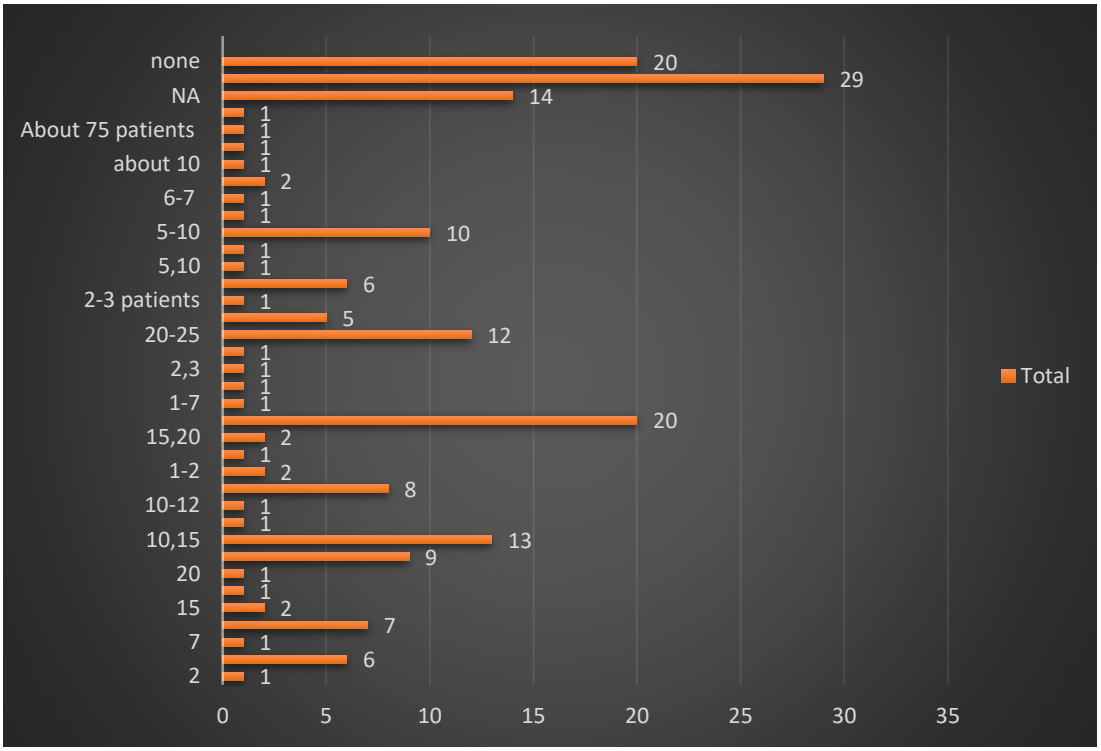


Figure 1.6.7

Interpretation: The above figure show that in a monthly basis how many patients do doctors prescribe Vitamin D3 Injection.

- **What changes you want in a formulation / presentation to increase your usage of Vitamin D3 Injection?**

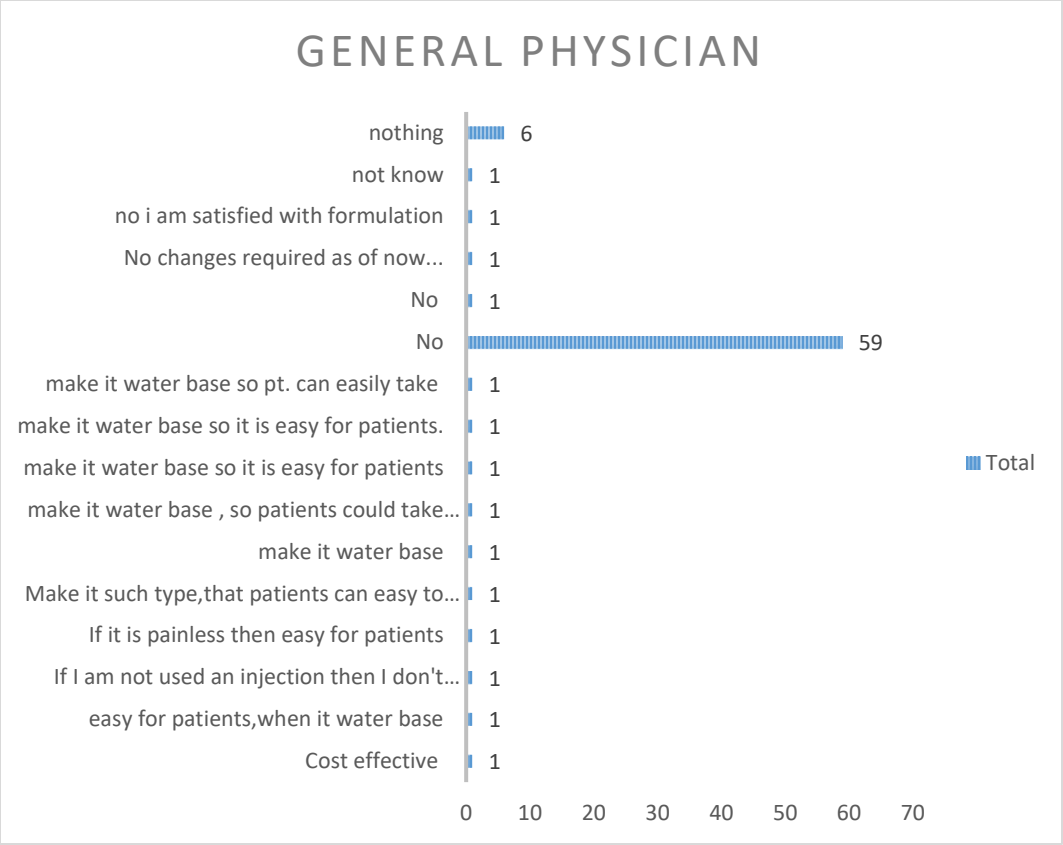


Figure 1.6.8 (A)

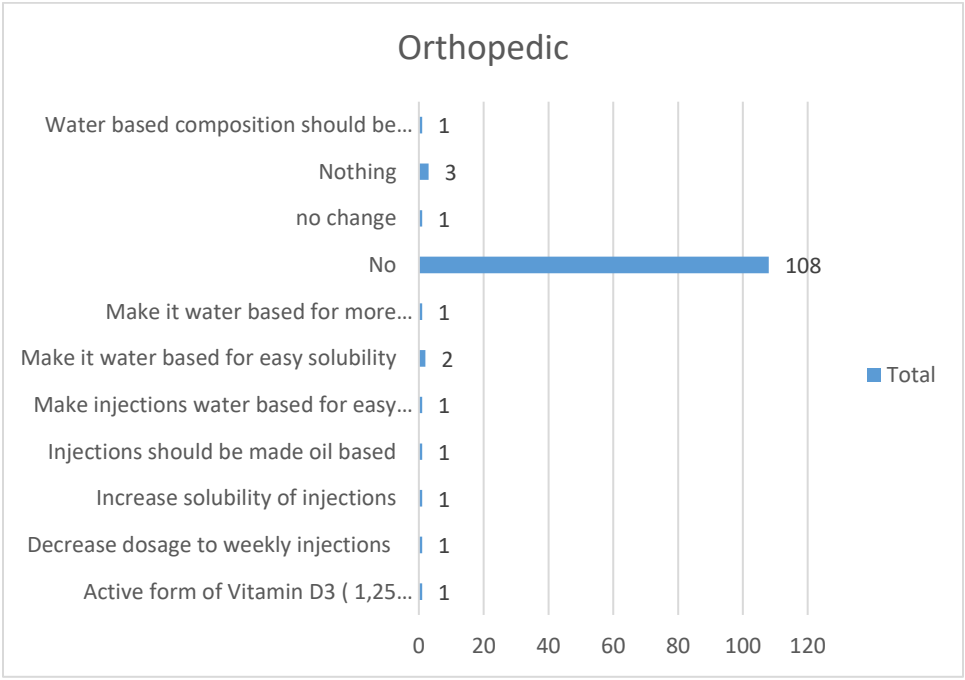


Figure 1.6.8 (B)

Interpretation: The above figure shows the maximum ratio of “NO” changes in formulation, and the other side few of the respondents said “make it water base” so it could be easy for the patients and also it is painless.

- **Any other comments/suggestions:**

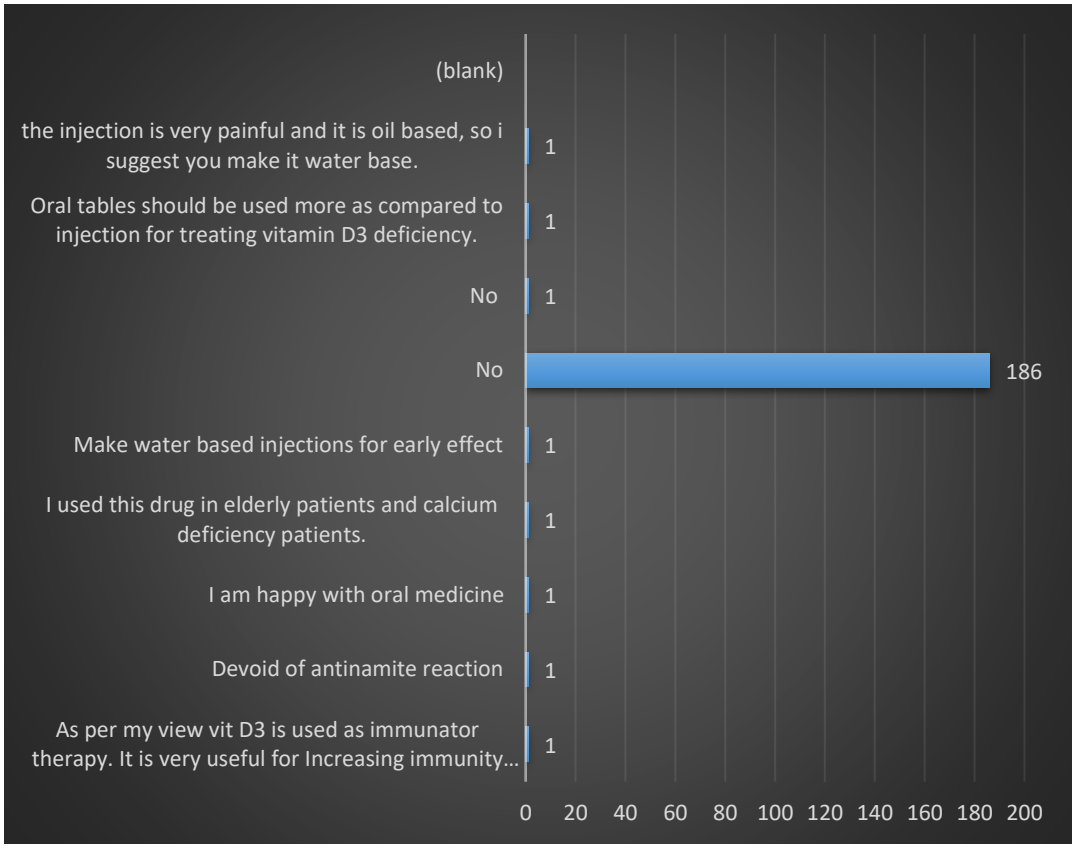


Figure 1.6.9

Interpretation: The above bar graph shows the suggestions by the doctors for the increase usage of products.

1.7 CONCLUSION:

From this survey I conclude that the ratio of the doctors who are prescribing the Vitamin D3 injection is of 40% and the other 60% doctors are not and never prescribe the vitamin D3 injection, according to them the Vitamin D3 injection are very oil based injection, and it is not easy for the patients because it is also very painful.

Also some of them are suggest to make water base injection so it could be easy for the patients.

Mostly doctors are preferred and oral medication for the Vitamin D3 deficiency and also in other sever disease.

I also conclude that few of doctors whose regular prescribing pattern is a Vitamin D3 injection and most of them are orthopedic doctors. They are preferred the Vitamin D3 injection in very severe case like (Osteoporosis, Arthritis, Osteomalacia, sever Joint pain) and also this Vitamin D3 injection they mostly prescribe to the elderly patients.

REFERENCE:

1. Hofbauer LC, Dunstan CR, Spelsberg TC, Riggs BL, Khosla S. Osteoprotegerin production by human osteoblast lineage cells is stimulated by vitamin D, bone morphogenetic protein-2, and cytokines. Biochem Biophys Res Commun. 1998;250:776–781. [PubMed] [Google Scholar]
2. Lin J, Manson JE, Lee IM, Cook NR, Buring JE, Zhang SM. Intakes of calcium and vitamin D and breast cancer risk in women. Arch Intern Med. 2007; 167:1050–1059. [PubMed] [Google Scholar]
3. Kamen D, Aranow C. Vitamin D in systemic lupus erythematosus. Curr Opin Rheumatol. 2008;20:532–537. [PubMed] [Google Scholar]
4. Judd SE, Tangpricha V. Vitamin D deficiency and risk for cardiovascular disease. Am J Med Sci. 2009;338:40–44. [PMC free article] [PubMed] [Google Scholar]
5. Choi HS, Kim KA, Lim CY, Rhee SY, Hwang YC, Kim KM, et al. Low serum vitamin D is associated with high risk of diabetes in Korean adults. J Nutr. 2011;141:1524–1528. [PubMed] [Google Scholar]
6. Turner C, Dalton N, Inaoui R, Fogelman I, Fraser WD, Hampson G. Effect of a 300,000-IU loading dose of ergocalciferol (vitamin D2) on circulating 1,25(OH)2-vitamin D and fibroblast growth

factor-23 (FGF-23) in vitamin D insufficiency. J Clin Endocrinol Metab. 2013;98:550–556. [PubMed] [Google Scholar]
7. Acibucu F, Dokmetas HS, Acibucu DO, Kilicli F, Aydemir M, Cakmak E. Effect of vitamin D treatment on serum sclerostin level. Exp Clin Endocrinol Diabetes. 2017;125:634–637. [PubMed] [Google Scholar]
8. Chung YS, Chung DJ, Kang MI, Kim IJ, Koh JM, Min YK, et al. Vitamin D repletion in Korean postmenopausal women with osteoporosis. Yonsei Med J. 2016;57:923–927. [PMC free article] [PubMed] [Google Scholar]
9. Burns J, Paterson CR. Single dose vitamin D treatment for osteomalacia in the elderly. Br Med J (Clin Res Ed) 1985;290:281–282. [PMC free article] [PubMed] [Google Scholar]
10. . https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3497336/
11. . https://pubmed.ncbi.nlm.nih.gov/19101755/
12. Am J Med. 2004 May 1;116(9):634-9 – PubMed
13. N Engl J Med. 2007 Jul 19;357(3):266-81 – PubMed
14. Osteoporos Int. 2003 Jan;14(1):19-26 – PubMed
15. J Nutr. 2006 Apr;136(4):1117-22 – PubMed
16. Endocr Rev. 2001 Aug;22(4):477-501 – PubMed
17. Osteoporos Int. 2005 Dec;16(12):1721-6 – PubMed
18. Am J Clin Nutr. 2004 Dec;80(6 Suppl):1678S-88S – PubMed
19. N Engl J Med. 2003 Apr 10;348(15):1503-4 – PubMed
20. Am J Clin Nutr. 1995 Mar;61(3 Suppl):638S-645S – PubMed
21. Am J Clin Nutr. 2004 Sep;80(3):752-8 – PubMed
22. SPRINT Investigators. Bhandari M, Guyatt G, et al. Study to prospectively evaluate reamed intramedullary nails in patients with tibial fractures (S.P.R.I.N.T): Study rationale and design. BMC Musculoskel Disord. 2008;9:91. Doi: 10.1186/1471-2474-9-91. – DOI – PMC – PubMed
23. Forster MC, Aster AS, Ahmed S. Reaming during anterograde femoral nailing: is it worth it? Injury. 2005;36(3):445–449. Doi: 10.1016/j.injury.2004.07.031. – DOI – PubMed
24. Lin CA, Swiontkowski M, Bhandari M, et al. Reaming does not affect functional outcomes after open and closed tibial shaft fractures: the results of a randomized controlled trial. J Orthop Trauma. 2016;30(3):142–148. Doi: 10.1097/BOT.0000000000000497. – DOI – PMC – PubMed
25. Keating JF, O'Brien PJ, Blachut PA, Meek RN, Broekhuyse HM. Locking intramedullary nailing with and without reaming for open fractures of the tibial shaft. A prospective, randomized study. J Bone Joint Surg Am. 1997;79(3):334–341. Doi: 10.2106/00004623-199703000-00003. – DOI – PubMed
26. Court-Brown CM, Will E, Christie J, McQueen MM. Reamed or unreamed nailing for closed tibial fractures. A prospective study in Tscherne C1 fractures. J Bone Joint Surg Br. 1996;78(4):580–583. Doi: 10.1302/0301-620X.78B4.0780580. – DOI – PubMed
27. Gaston P, Will E, Elton RA, McQueen MM, Court-Brown CM. Fractures of the tibia. Can their outcome be predicted? J Bone Joint Surg Br. 1999;81(1):71–76. Doi: 10.1302/0301-620X.81B1.0810071. – DOI – PubMed

28. Bee CR, Sheerin DV, Wuest TK, Fitzpatrick DC. Serum vitamin D levels in orthopaedic trauma patients living in the northwestern United States. J Orthop Trauma. 2013;27(5):e103–e106. Doi: 10.1097/BOT.0b013e31825cf8fb. – DOI – PubMed
29. Hood MA, Murtha YM, Della Rocca GJ, et al. Prevalence of Low Vitamin D Levels in Patients With Orthopedic Trauma. Am J Orthop (Belle Mead NJ). 2016;45(7):E522–E526. – PubMed
30. Sprague S, Bhandari M, Devji T, et al. Prescription of vitamin D to fracture patients: a lack of consensus and evidence. J Orthop Trauma. 2016;30(2):e64–e69. Doi: 10.1097/BOT.0000000000000451. – DOI – PubMed
31. Ross AC, Manson JE, Abrams SA, et al. The 2011 report on dietary reference intakes for calcium and vitamin D from the Institute of Medicine: what clinicians need to know. J Clin Endocrinol Metab. 2011;96(1):53–58. Doi: 10.1210/jc.2010-2704. – DOI – PMC – PubMed
32. Lidor C, Dekel S, Hallel T, Edelstein S. Levels of active metabolites of vitamin D3 in the callus of fracture repair in chicks. J Bone Jt Surg Br. 1987;69(1):132–136. Doi: 10.1302/0301-620X.69B1.3029136. – DOI – PubMed
33. Ömeroğlu H., Ates Y., Akkuş O., Korkusuz F. Biomechanical analysis of the effects of single high-dose vitamin D3 on fracture healing in a healthy rabbit model. Archives of Orthopaedic and Trauma Surgery. 1997;116(5):271–274. Doi: 10.1007/BF00390051. – DOI – PubMed
34. Omeroğlu S, Erdoğan D, Omeroğlu H. Effects of single high-dose vitamin D3 on fracture healing. An ultrastructural study in healthy Guinea pigs. Arch Orthop Trauma Surg. 1997;116(1–2):37–40. Doi: 10.1007/BF00434098. – DOI – PubMed
35. Ettehad H, Mirbolook A, Mohammadi F, Mousavi M, Ebrahimi H, Shirangi A. Changes in the serum level of vitamin d during healing of tibial and femoral shaft fractures. Trauma Mon. 2014;19(1):e10946. Doi: 10.5812/traumamon.10946. – DOI – PMC – PubMed
36. Binkley N, Coursin D, Krueger D, et al. Surgery alters parameters of vitamin D status and other laboratory results. Osteoporos Int. 2017;28(3):1013–1020. Doi: 10.1007/s00198-016-3819-9. – DOI – PubMed
37. Bhandari M, Wasserman S, Yurgin N, Petrisor B, Sprague S, Dent R. Development and preliminary validation of a Function IndeX for Trauma (FIX-IT) Can J Surg. 2013;56(5):E114–E120. Doi: 10.1503/cjs.004312. – DOI – PMC – PubMed
38. Leow JM, Clement ND, Tawonsawatruk T, Simpson CJ, Simpson AHRW. The radiographic union scale in tibial (RUST) fractures: reliability of the outcome measure at an independent centre. Bone Joint Res. 2016;5(4):116–121. Doi: 10.1302/2046-3758.54.2000628. – DOI – PMC – PubMed
39. Litrenta J, Tornetta P, Mehta S, et al. Determination of radiographic healing: an assessment of consistency using RUST and modified RUST in metadiaphyseal fractures. J Orthop Trauma. 2015;29(11):516–520. Doi: 10.1097/BOT.0000000000000390. – DOI – PubMed
40. Kooistra BW, Dijkman BG, Busse JW, Sprague S, Schemitsch EH, Bhandari M. The radiographic union scale in tibial fractures: reliability and validity. J Orthop Trauma. 2010;24(Suppl 1):S81–S86. Doi: 10.1097/BOT.0b013e3181ca3fd1. – DOI – PubMed

41. Cekic E. Reliability of the radiographic union score for tibial fractures. Acta Orthop Traumatol Turc. 2014;48(5):533–540. Doi: 10.3944/AOTT.2014.14.0026. – DOI – PubMed
42. Cox G, Einhorn TA, Tzioupis C, Giannoudis PV. Bone-turnover markers in fracture healing. J Bone Joint Surg Br. 2010;92(3):329–334. Doi: 10.1302/0301-620X.92B3.22787. – DOI – PubMed
43. Gustilo RB, Merkow RL, Templeman D. The management of open fractures. J Bone Joint Surg Am. 1990;72(2):299–304. Doi: 10.2106/00004623-199072020-00023. – DOI – PubMed

(PART 2)

ONLINE COURSE REPORT-

SUBMITTED BY- AEMAN SHAIKH

MBAPM 11

ROLL NO- 0165

CONTENTS

NAME OF THE COURSE-

Become a product manager

COURSE DESCRIPTION-

This course introduce the emerging field of Product Management Skills, roles & responsibilities. The role of their responsibilities has changed across different industries & companies.

Here the Product Management combines marketing, development & analysis to maximize the effectiveness of products & in turn its profit.

Also choose the functional requirements, and manage the launch of new features. In this course we learn how the product will become successful also we know the different competition & competitors of our product.

This course is designed by those who cares about the future product branding & it's successful.

This course content the management trainee which is in individual who is trained to assume the duties of management.

Also the assistant product manager which is to support the product managers in improving an existing products marketing's campaigns & development for new products which is going to be fit for the company.

Also it helps in identifying the targeted audience for a product. The product managers own the business strategies behind a product, specify its functional requirements, and launch of features which are ultimately responsible for the business success of the products.

OBJECTIVE-

- To understand the importance of the product manager role, skills.
- Also to learn about their needs at different positions
- To understand the skills, communication skills to improve our self.

COURSE CONTENTS-

Section 1- BEFORE STARTING THE COURSE

- Course overview

Section 2- INTRODUCTION TO THE PRODUCT MANAGEMENT

- What is product managers
- What is product
- Three different types of product managers roles

Section 3- INTRODUCTION TO PRODUCT DEVELOPMENT

- There are four major phases of the product lifecycle
- The product development process.

Section 4- IDEAS & USERS NEEDS

- Introduction to the ideas & user's needs.
- Where ideas will come from as a product manager.
- Users vs. Customer.

Section 5- COMPETITIVE & MARKET ANALYSIS.

- Marketing research & Sizing the market.
- Introduction to finding the competitor
- Finding competitor as a product manager.
- Direct & Indirect/potential competitor & their impact

Section 6- CUSTOMER DEVELOPMENT

- What is customer development
- Key difference in customer development
- The product manager & data diet

Section 7- DESINING & RUNNING EXPERIMENT.

- What is MVP (Minimum Viable Product)
- How products manager think about MVPs
- Identifying your assumptions

Section 8- CONCEPTUALIZING THE SOLUTION

Section 9- METRICS FOR PRODUCT MANAGER FOR DEFINING SUCCESS & MEASURING RESULT.

- Introduction to metrics
- All kind of metrics

Section 10- BUILDING THE PRODUCTS-PROJECT MANAGEMENT FOR PMs

- Introduction to epic
- Users stories & acceptance criteria
- Prioritization

Section 11- WORKING WITH PEOPLE & STAKEHOLDER

- General communication skills
- Working with executive & other

Section 12- TECHNOLOGY FOR PRODUCT MANAGER

- Why should we learn technology?
- Understanding API (Application Programming Interface)

Section 13- WHAT YOU SHOULD DO TO PREPARE YOURSELF FOR JOB

- Getting relevant experiences
- Then Building a portfolio with a side project

Section 14- HOW TO LOOK FOR A JOB IN PRODUCT MANAGEMENT

- Where to look & what to look for, for the job.
- Inside advices on your Product Management jobs hunt

Section 15- HOW TO GET JOB IN PRODUCT MANAGEMENT

- Resume
- Interviews for product management

LEARNING METHODOLOGY-

1. Video lectures
2. Shares pdf, & there is a quiz after every section

3. Also reading material, additional reading at every completed section. All reading give a better understanding of the topic discussed in every section.
4. Graded quizzes worth 30% of the final course grade.
5. Discussion questions are for in-depth exploration of course content.

KEY LEARNING-

Different approaches, roles, skills of the Product Manager.

Importance of focusing on the product & the Success of the product.

A framework for understanding between Product Management & Project Management.

The different tools and techniques for improving our Product.

To figure out how we do better Product Manager as compare to other.

THANK YOU