

**Summer Training at
MSN Laboratoreis Pvt. Ltd., Hederabad
(April 3 to June 2, 2017)**

Market Assessment of Luarasidone in India

**By
Nikhil Dhariwal**

**Under the guidance of
Mr. Rahul Sharma**

**MBA Pharmaceutical Management
2016-2018**

 **IIHMR UNIVERSITY**
School of Pharmaceutical Management
The IIHMR University, Jaipur
2017

CERTIFICATE

This is to certify that **Mr. NIKHIL DHARIWAL** has undergone summer training in **MSN Laboratories Private Limited, Delhi** from **3rd April to 2nd June 2017**.

The candidate himself completed the project assign to his during summer training. His approach to the project was sincere and proactive. This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in Pharmaceutical Management.

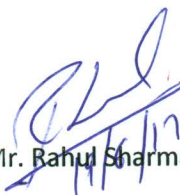
I wish him success in all his future endeavors.



Col. (Dr.) Ashok Kaushik

Dean (Academic & Student Affair)

The IIHMR University, Jaipur



Mr. Rahul Sharma

Assistant Professor

The IIHMR University

MSN Laboratories Private Limited

MSN House, Plot No.: C-24,
Sanath Nagar Industrial Estate, Sanath Nagar,
Hyderabad, Telangana, Pincode: 500018. India.
CIN: U24239TG2003PTC041583
Phone: +91-40-30438600 Fax: +91-40-30438798

March 31, 2017

To
Dr.Sandeep Narula
IIHMR University,
Jaipur .

Dear Sir/Madam,

This has reference to your letter, where in you have requested us to permit **Mr Nikhil Dhariwal** do the project work in our organization.

We are pleased to permit him to do the project work in our organization from **April 6, 2017 to June 30, 2017** in **Sales & Marketing-Domestic Department at Delhi**. His project guide will be Mr.Girish Misra - Sales Manager for North & West.

Please note the following points:

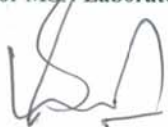
1. The Project will be decided by the company.
2. He is not entitled for any type of stipend during the course of the project work form the company.
3. The company shall have no liability for compensation whatsoever for any injury/accident arising out of or in the course of the project.
4. The candidate is liable to conform to company policies and procedures, rules, working timings and general work practices, which are subject to change from time to time
5. The candidate is responsible for the safe keep and return in good condition and order, of all property such as tools, equipment, instruments, books, uniforms etc., which may be in his use, custody, care or charge. The company shall have the right to deduct the monetary value of all such things from his dues and take such other action, as we deem proper in the event of his failure to account for such property to our satisfaction.
6. During the period of project work, his services are subject to termination without any notice or assigning any reason.
7. It is also understood that he would adhere to all rules and regulations applicable for the successful and timely completion of his assignment.

We welcome your student on behalf of our organization and hope that the structured learning experience provided to him will benefit your student and the cause of Professional Management.

Thanking you,

Yours truly,

for **MSN Laboratories Private Limited**


P Srinivas
Senior Manager - HR





MSN Laboratories Private Limited

MSN House, Plot No.: C-24,
Sanath Nagar Industrial Estate, Sanath Nagar,
Hyderabad, Telangana, Pincode: 500018. India.
CIN: U24239TG2003PTC041583
Phone: +91-40-30438600 Fax: +91-40-30438798

July 17, 2017

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr Nikhil Dhariwal**, s/o Dr A C Dhariwal bearing Registration No: 0073 from IIHMR University, Jaipur has successfully completed his project work in our Formulation Marketing Department on "**Post Marketing Assessment of Lurasidone and Levetiracetam**" at MSN Laboratories Pvt. Ltd under the guidance of **Mr.Girish Misra - Sales Manager, CNS Division** from 6th April, 2017 to 30th June, 2017.

During Project work **Mr Nikhil Dhariwal** Performance was found satisfactory.

for MSN Laboratories Pvt. Ltd

P Narsimha Rao
Senior Vice President - Group HR

ACKNOWLEDGEMENT

“Whatever I have ever achieved, is because of the love and support of my family, friends and peers”

This project work is not the result of the efforts of a single man, but a concoction of contributions and support of the Almighty and many individuals. First, I thankful to my course coordinator Dr. Sandeep Nerula, Assistant Professor for allowing me to conduct this study under the umbrella of the School of Pharmaceutical Management, IIHMR University, Jaipur.

I would like to express my supreme gratitude to my guide Mr. Girish Mishra and co-guide Mr. Ashish Juneja, to have given me the opportunity to work under their supervision and have nurtured my small idea to this full-fledged research.

I am extremely thankful and obliged to have given the opportunity to work under the supervision Dr. A. C. Dhariwal, Director- NCDC, who despite his extremely busy schedule, always responded to all my queries and directed me on the right path.

Behind every successful endeavor, stands a man, and behind that man, stands his family and friends. This project would not have been possible without the forever love and support of my father Dr. Akshay Chandra Dhariwal, Director- NCDC, who, since childhood has been the constant source of inspiration and motivation to me. He has always taken a keen interest in my projects and guided me to do my best. Though, I can never reach the excellence of his intellect, but a son, I have the privilege of absorbing his aura to my content.

My mother Smt. Asha Dhariwal, B. com., the perfect homemaker whose love always protected and pushed me to reach for the skies. A star student throughout her life, who inculcated the best of habits in her children for them to excel just like she did.

My elder brother Mr. Akhil Dhariwal, Senior Enginner, B.Tech.(EEE). Since my childhood, he has been best companion anyone could ever have. He has supported this study with his motivation, critique and wisdom at every step of the way.

Mr. Nikhil Dhariwal

Contents

1. Section-1 Introduction
 - 1.1 Company Profile
 - 1.2 Schizophrenia & Bipolar Depression
 - 1.3 Bipolar Disorder
 - 1.4 Conceptual Discussion
 - 1.5 Research Question
 - 1.6 Objective
 - 1.7 Project Review

2. Section-2 Mode of Data Collection
 - 2.1 Methodology
 - 2.2 Material and tools
 - 2.2.1 Type
 - 2.2.2 Collection tool
 - 2.2.3 Collection

3. Section-3 Limitation, Conclusions and Suggestions
 - 3.1 Conclusion
 - 3.2 Suggestion
 - 3.3 Limitation

4. References

Serial No.	Contents
1.	Abbreviations and Acronyms
2.	List of Figures
3.	Introduction
4.	Objectives
5.	Review of Literature
6.	Methodology
7.	Results
8.	Conclusion
9.	References
10.	Annexure 1: Questionnaire
11.	Annexure 2: Questionnaire

Abbreviations

API	Active Pharmaceutical Ingredients
IIHMR	Indian Institute of Health Management Research
IEC	Information, Education and Communication
MS	Microsoft
WHO	World Health Organization
LEV	Levetiracetam
LUR	Lurasidone
&	And

List of Figures

1	Limitation on current antipsychotics
2	Limitation on current antipsychotics
3	Preference for Lurasidone in Long term therapy in Schizophrenia
4	Preference for Lurasidone in Maintenance therapy in Schizophrenia
5	Choice of Prescribing Lurasidone in Bipolar 1 Depression
6	Number of Specialist doctors responded of 7 different hospitals

Section – 1

Introduction

Section – 1

Introduction:

Company Profile:

MSN Laboratories Private Limited

MSN Group is one of the fastest growing manufactures of Active Pharmaceutical Ingredients (APIs) and finished dosages in India. Established in the year 2003, MSN Group comprises of 8 API manufacturing plants (including one for Oncology), 3 finished dosage facilities (including one for Oncology) and a dedicated R&D Centre. (1)

Financial

In a span of 8 years, company recorded 100% growth in multiple years from USD 22 million in 2005 to USD 130 million in 2001. (1)

Schizophrenia & Bipolar Depression:

Schizophrenia

Schizophrenia is a serious mental illness that interferes with a person's ability to think clearly, manage emotions, make decisions and relate to others. Research has linked schizophrenia to changes in brain chemistry and structure.

Bipolar Disorder

Bipolar disorder is treatable medical illness marked by extreme changes in mood, thought, energy and behaviour. A person mood can alternate between two poles of 'mania' and 'depression'. This change in mood or mood swing can last for hours, weeks or even months. It adversely affects spouses, family members, friends and people in the workplace. (4)

Types of Bipolar Disorder:

1. **Bipolar I Disorder:**
One or more manic episodes or mixed episodes & often or more major depressive episodes.
2. **Bipolar II Disorder:**
One or more major depressive episodes with at least one Hypomanic episodes.
3. **Cyclothymic Disorder:**
Chronic, fluctuating mood disturbance involving periods of hypomanic symptoms and depressive symptoms.

Conceptual Discussion:

Lurasidone, is a new atypical antipsychotic developed by Sunovion Pharmaceuticals Inc., that was approved for use in USA in 2010. It was approved for use in bipolar depression in July 2013. Lurasidone is a strong dopamine D2 receptor blocker, as are almost all currently known antipsychotic used in schizophrenia, so its development in the schizophrenia and approval came as no surprise. Consistent with the major thrust of development in the schizophrenia treatment area today, Lurasidone preclinical development was associated with the search for a dopamine D2 blocker with little or no extrapyramidal symptoms and little or no prolactin rise. Sometimes an absence of cholinergic muscarinic blockade and a felicitous balance of agonism and antagonism at some of the large number of serotonin receptor subtypes can achieve this desirable side effect profile.

Research Question:

What is the opinion of Psychiatrist about new antipsychotic Drug Lurasidone in Delhi city.

Objectives:

- To assess the psychiatrist opinion about new antipsychotic Lurasidone
- To find out the market potential of Lurasidone in future
- To find out the limitation of current antipsychotic drugs
- To find out the main advantage or disadvantage of Lurasidone over other Antipsychotic drugs

Project Review

The objective of the project to understand what are limitations of current antipsychotics and development a medicinal positioning for Lurasidone. For this we have to understand customer needs. The objective of this project to know the opinion about the new antipsychotic 'Lurasidone' in Delhi city with respect to survey in best hospitals of the city.

Section – 2

Mode of Data Collection

Section-2

Mode of Data Collection:

Methodology:

A questionnaire was prepared to get the awareness of new molecules in customer.

- Study design: Descriptive
- Primary data: Delhi doctors
- Secondary data: journal, book and google browsing
- Structure questionnaire: was used to collect the information from Psychiatrist
- Total Respondent:
- Study area: Delhi hospitals (AIIMS, Safdarjung, Apollo, Medanta city)
- Sampling: Convenience sampling

Material and tools:

Data type: Primary and Secondary data

Data tool:

Data will be collected from the questionnaire and responses were compiled.

Data collection;

Secondary data was collected from the article. Publications, & books which are assessed through web

Section – 3

Results and Findings

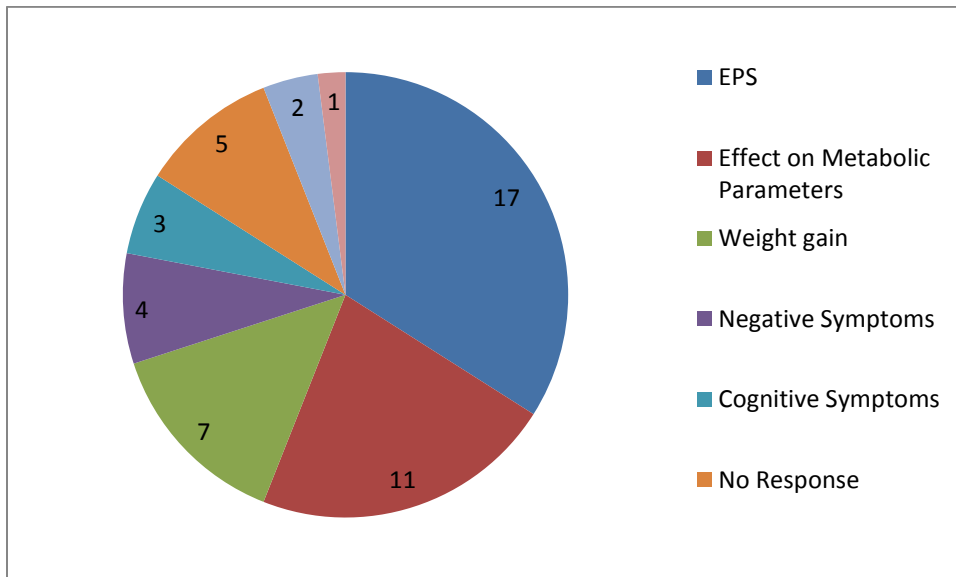
Section - 3

Results & Findings:

1. Figure 1

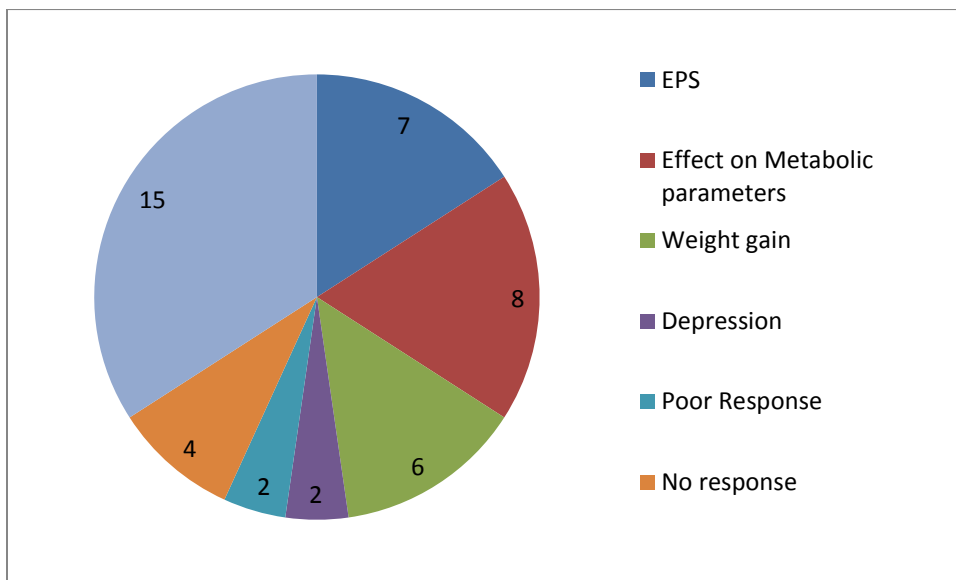
Limitation of current antipsychotics

Limitations	No. of Psychiatrist Response
EPS	17
Effect on Metabolic Parameters	11
Weight gain	7
Negative Symptoms	4
Cognitive Symptoms	3
No Response	5
Cost	2
Delayed Response	1



2. Figure 2

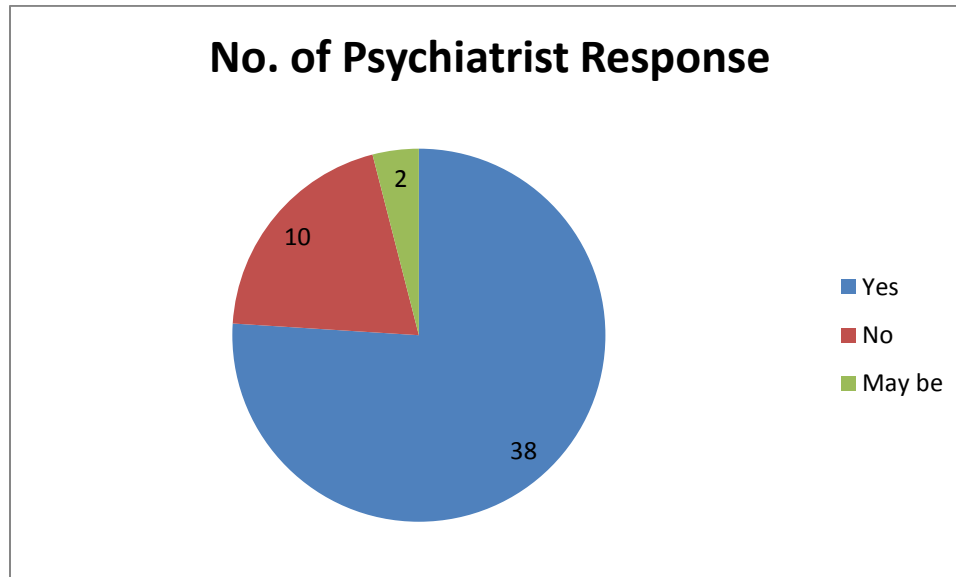
Limitation	No. of Psychiatrists Response
EPS	7
Effect on Metabolic parameters	8
Weight gain	6
Depression	2
Poor Response	2
No response	4
Not response to Question	15



3. Figure 3

Preference for Lurasidone in long term therapy in Schizophrenia

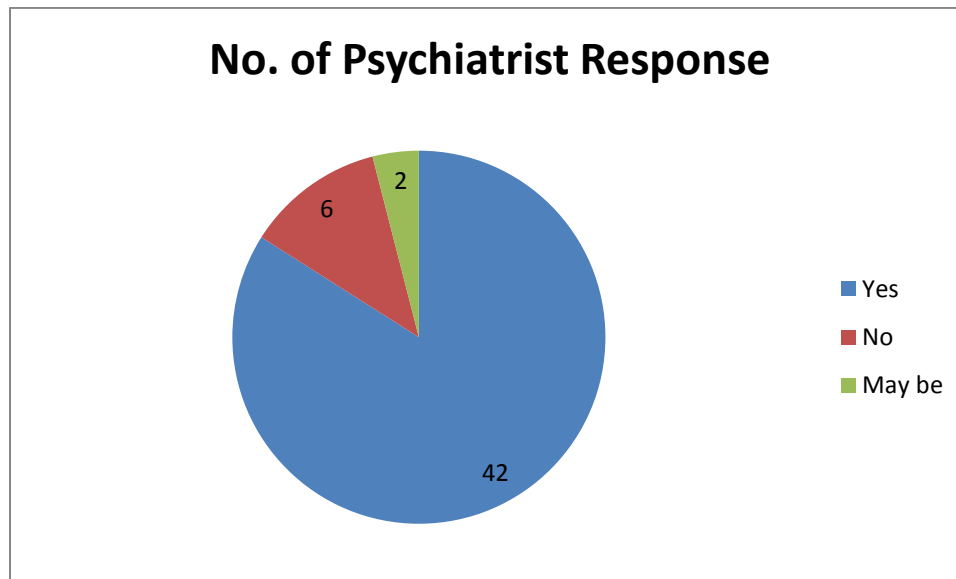
Preference	No. of Psychiatrist Response
Yes	38
No	10
May be	2



4. Figure 4

Preference for Lurasidone in Maintenance therapy in Schizophrenia

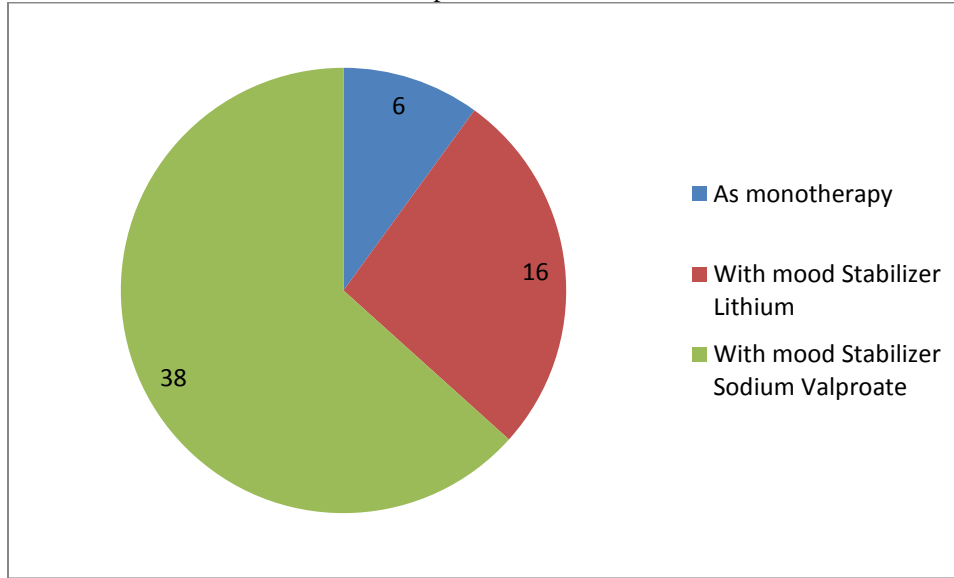
Preference	No. of Psychiatrist Response
Yes	42
No	6
May be	2



5. Figure 5

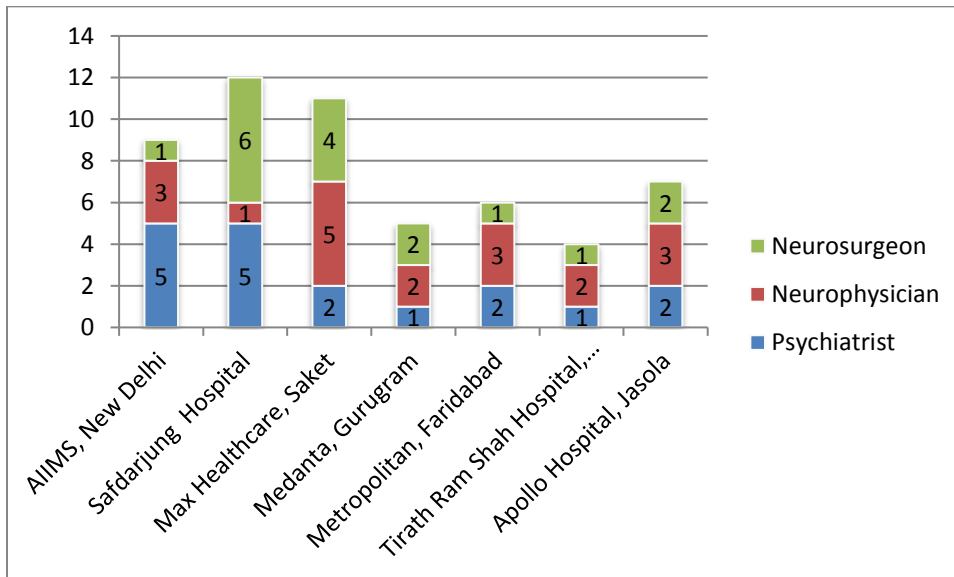
Choice of Prescribing Lurasidone in Bipolar I Depression

Preference	No. of Psychiatrist Response
As monotherapy	6
With mood Stabilizer Lithium	16
With mood Stabilizer Sodium Valproate	38



6. Figure 6

Number of Specialist doctors responded of 7 different hospitals



Section- 4

Limitation, Conclusions and Suggestions

Section – 4

Conclusion:

- Weight gain, EPS & Effect on metabolic parameters are the main limitations of current antipsychotic drugs used in the treatment of the Schizophrenia and Bipolar I depression
- Antipsychotic which has Lower rates of relapse is the first choice of psychiatric to prescribe
- Opinion about the new antipsychotic Lurasidone was good as per response given by psychiatric
- The drug will be replaced by Lurasidone by psychiatrist was Olanzapine in schizophrenia treatment and Quetiapine in Bipolar I Depression

Suggestion:

- First of all, responses given by psychiatrist for the opinion about new antipsychotics Lurasidone was positive. Hence, it can be considered that the market conditions and initial opinion about the product is ideal for the launch of Lurasidone
- It is observed that Psychiatrists are less aware about the indication of Lurasidone in Bipolar I Depression than in indication in Schizophrenia
- Antipsychotic which has 'Lower rate of relapse' was the first preference to prescribe as per responses given by psychiatrist

Limitation:

- This market survey is limited to Delhi city only
- The sample size has limited due to time constraint

References

1. MSN Laboratories Pvt. Ltd. [Online] 2016
<http://www.msnlabs.com/about.html>
2. MSN Laboratories Pvt. Ltd. [Online} 2016
<http://www.msnlabs.com/vision-mission.html>
3. Duckworth, Ken. Schizophrenia factsheet. [Online] National Alliance on Mental Illness, April 2013
4. Alen J. Gelenberg, Dr. Gelenberg. Guide to Depression and Bipolar Disorder. [Online] DBSA, 2002
5. Belmaker, R.H. Lurasidone and Bipolar Disorder. [Online] American Journal of Psychiatry, February 2014

Annexure 1

Post Marketing Assessment of Lurasidone

Dear Dr,

I would like to introduce myself as Mr. _____, MBA Student of _____ University. As the part of my course curriculum, I have to undergo my summer internship on the Topic “Post Marketing Assessment of Lurasidone”. In this regard I am seeking your valuable feedback as the prescriber of Lurasidone. I assure you that your feedback will be used by me exclusively towards partial fulfilment of my MBA course and won't be shared / publicized with any commercial intention.

1. **How is your experience with the latest Anti-psychotic drug Lurasidone for managing Schizophrenia in the last 8 months**
a) Excellent b) Good c) Moderate d) Poor
2. **Your preference of the drug Lurasidone is widely to manage**
a) Schizophrenia b) Bipolar Depression
c) Schizophrenia & Bipolar Depression d) Not tried yet
3. **Your preferred prescribing dose of Lurasidone to manage Schizophrenia**
a) Above 80 mg b) 40 – 80 mg c) 40 mg d) 80 mg
4. **Your preferred prescribing dose of Lurasidone to manage bipolar depression**
a) Above 80 mg b) 40 – 80 mg c) 40 mg d) 20 mg
5. **Your choice of prescribing Lurasidone to manage Schizophrenia**
a) Monotherapy b) Combination with other anti-psychotics
6. **Your choice of prescribing Lurasidone to manage Bipolar depression**
a) Monotherapy b) Combination with other drugs
7. **The concerns that limits your prescriptions to recommend Lurasidone**
a) Dose Titration b) Side-effects c) Efficacy d) None
8. **How is the Response rate of your Schizophrenia patients to Lurasidone?**
a) Excellent b) Moderate c) Poor

Annexure 2

Market Assessment of Levetiracetam

Dear Dr,

I would like to introduce myself as Mr. _____, MBA Student of _____ University. As the part of my course curriculum, I have to undergo my summer internship on the Topic “Market Assessment of Levetiracetam”. In this regard I am seeking your valuable feedback as the prescriber of Levetiracetam. I assure you that your feedback will be used by me exclusively towards partial fulfilment of my MBA course and won't be shared / publicized with any commercial intention.

1. In the management of Epilepsy which of these molecule will be on top of your mind

A. Levetiracetam B. Oxcarbazepine C. Valproate D. Others

2. Preferred indication for prescribing Levetiracetam to the patients

A. Partial Onset Seizures B. Juvenile Myoclonic Seizures

C. Generalised Seizures D. All the above

3. What's the length of Levetiracetam prescription for your patients

A. Upto 3 years B. No timelines C. Based on the patients response

4. My Choice of prescribing Levetiracetam is as

A. Monotherapy B. Adjuvant therapy C. Both Choice A / B based on the need

5. Have you come across cognition disturbance with the patients who are on Levetiracetam monotherapy?

A. No B. Yes C. Can't comment

6. How frequently you shift the brands of Levetiracetam for your patients?

A. Yes, if only quality issues are there B. Yes, if only availability issues are there

C. Both A and B

7. Will you continue to prescribe the brand of Levetiracetam if that brand is acquired by some other company?

A. Yes. My epileptic patients are responding well to that concerned brand because of its quality. So will continue prescribing.

B. Will think over it and take a decision.

8. Will price be a concern for you to choose the brand of Levetiracetam?

A. No B. Yes