

## **CHAPTER 3: SCALE DEVELOPMENT**

### **3.1 Item writing/adaptation**

There are certain tools available to diagnose internet overuse like Internet Addiction Diagnostic Questionnaire (DQ) by Young and Brenner's Internet related Addictive Behavior Inventory. They are widely used but they are not standardized tools. DQ is of 20 items and it is a five-point scale. It focuses on escape, compulsion, neglecting duties, anticipation, lack of control, social avoidance, and examines symptoms of addiction like preoccupation with internet use, ability/inability to control online use, hiding/lying about online use and continuing online use despite negative consequences of the behaviour. Brenner's Internet-related Addictive Behavior Inventory comprises 32 items about excessive internet use with true/false options. Many researchers have done good work on co-morbid nature of internet and tried to study how internet is used by individuals who have other mental disorders like depression, loneliness, phobia, ADHD, and anxiety. Some have studied the effects of internet on other factors like self-efficacy and attitude. They too constructed their own tool as no standardized tool was available for such a vast use and effects of internet. Various other tools were also referred by this research scholar to understand the nature of internet overuse and its co-morbid nature which can help to construct a better tool on internet overuse. Other tools are:

- Generalized pathological Internet Use scale.
- Proposed criteria for Problematic Internet use by Shapira et al.
- Scale for Loneliness by Morahan-Martin
- Caplan's criteria for Problematic Internet use
- Symptoms of Pathological Internet Use (PIU) by R A Davis
- Children's depression Inventory (CDI, KOVACS, 1992)
- Social Anxiety Sub-scale. Revised version of Screen for child anxiety related emotional disorder.
- Chen Internet Addiction Scale (CIAS)
- ADHD Self-rated scale
- The centre for epidemiological studies' depression scale (CES-D)
- Social phobia inventory

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- Pathological use Scale by Morahan, Martin, Schumacher
- Internet Self efficacy Scale by Eastin and LaRose (2000)
- UCLA Loneliness Scale (Russell, 1996)
- Online Entertainment Scale
- Preference for online social interaction
- Internet Behavior and Attitude Scale
- Beard and Wolfe's diagnostic criteria
- Social Phobia Inventory and social Interaction Anxiety Scale

A list of items was prepared after referring the above mentioned tools. Overlapping items were also retained and out of them the items more suitable for the tool for this research, were suggested by the experts. The list was of 281 items with different diagnostic criteria like: withdrawal, tolerance, impulsive use, salience, negative social outcome, negative academic/occupational outcome, time management, health problems, physical problems, guilt, anxiety, depression, loneliness, feelings of helplessness, confidence, disadvantages, social phobia, distraction, ADHD, self-efficacy, competency, security, leisure, entertainment, productive use, social comfort, and advantage.

### **3.2 Expert validation**

On the basis of comments given by the experts, 214 items were selected out of 281 items. Repeated items were eliminated. Remaining items were retained with their respective factors. The list of these items was given to the experts to validate them on four criteria: readability, appropriateness, communicability, and understanding.

The experts were of different professions. Panel of experts comprises four psychiatrists, two of whom have private clinic and other two psychiatrists are associated with government hospital. Five clinical psychology teachers from two universities too evaluated the questionnaire.

Certain items were modified or rejected from the scale on the basis of experts' suggestions. Number of items eliminated or added in the dimensions is presented in table 1. The criteria for evaluating the items were repetition, similarity, communicability & understanding, specification (time/money/content), segregation (physical/psychological), and broad and unclear respectively.

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*Table1: Changes in identified parameters*

Dimensions	Number of items eliminated/added
Withdrawal	12
Tolerance	5
Compulsion	9
Impulsive use	3 & 1 added
Saliency/Functional impairment	4
Loneliness	9
Socially liberating	17
Social confidence	1
Distraction	all
Social comfort	None
Advantages	19
Disadvantages	17
Entertainment	All
Productive use	All

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Changes were made in the items on the basis of experts' comments, and some of the major changes are described below:

One of the items in withdrawal says, "I miss being online and feel lost if I can't access Facebook/ Twitter". If a participant is not using Facebook or Twitter then she/he could skip the item. The item was modified by including a broad term "social media". The modified item says, "I miss being online and feel lost if I can't access Facebook/ Twitter/any social media".

On the other hand, in "tolerance" the item which was looking general was rephrased and made more specific and understandable.

"I need to increase the amount of time to get the same level of satisfaction".

It was rephrased and put it as,

"I feel that I need to increase the time constantly/ day-by-day to engage on internet to derive the same amount of satisfaction".

Three items which were about spending money on internet for various purposes were combined in one item with two options.

- I keep coming back online even though I am aware that I have spent a lot already on, -online shopping

-downloading apps (games, music)

Five items were added, in the dimension "compulsion", which depict individual's inability to resist checking their mobile while performing important activities.

- Though it is dangerous, I can't resist check my notifications while driving.
- I eat food half- heartedly as internet occupies most of my attention.
- I keep surfing the internet while waiting in a queue/on airport/ on railway station.
- I am not able to resist uploading my pictures on social media as I feel the more I get "likes" and "comments", the more people like me.

These items are constructed on the basis of day-to-day observations around us and the experiences individuals have with the internet. The experts had suggested not to include the

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items of “advantage” and “disadvantage” dimensions in the tool as they are not relevant to addiction or compulsion but still they are retained in the tool as this research has some other objectives like,

- To study the prevalence of internet overuse across different age groups and purpose of using internet in different age groups
- To study how does the purpose of using internet affects the development of internet Overuse

A final list of 100 items inclusive of the reverse items was prepared and a pilot study was conducted using this scale.

### 3.3 Pilot Study

#### 3.3.1 Sample of pilot study

The study was carried out in Vadodara and Anand, Gujarat state. The sample consisted 70 participants in the range of 15-50 years including males and females. The sample is divided in three age groups, i.e. 15-25 years, 26-35 years and 36-50 years. Occupation wise, the participants comprised of, students, teachers, and banking sector.

*Table 2: Sample for pilot study*

Sample (N=70)	Male	female
Students (13-22 years)	20	20
Professional (23-40 years)	15	15

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### ***3.3.2 Tools for pilot study***

Information about demographic parameters was collected. Details about internet use were also collected like; hours of internet use per day, name of the websites/applications used frequently, and purpose of using these websites/applications. The scale for internet overuse with 100 items which was finalized from phase I was administered. The factors with the Chronbach  $\alpha$  have been described in the result section.

### ***3.3.3 Procedure for pilot study***

The schools had willingly supported the research; no prior permission was required to conduct the pilot study. The self-administered scale was given to the participants and the purpose of the research was explained to them. It was administered in the class room only and participants are asked to give the response that first comes to their mind. The scale was given to the professionals of various sectors who are from 26 to 50 years of age. Their responses were collected after two days. Altogether 62 participants responded out of 70.

### ***3.3.4 Result of pilot study***

Factor analysis was performed using SPSS after the data was coded and processed properly. The purpose was to come up with meaningful clusters of items contributing to factors and to eliminate the not so good items from the scale. Scree plot is given in figure 1 and the results from the analysis with Eigen values, factor loading and Chronbach alpha are presented in the table 3.

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*Table 3: Factors with factor loading and Chronbach alpha*

Factors of internet overuse	Items	Factor Loading	Chronbach $\alpha$
1. Withdrawal	1. If I can't go online, I feel angry.	.890	.967
	2. If I can't go online, I feel irritable.	.871	
	3. If I can't go online, I feel restless.	.871	
	4. If I can't go online, I feel anxious.	.845	
	5. If I can't go online, I feel moody.	.825	
	6. If I can't go online, I feel jittery.	.819	
	7. I use the internet when, I had bad interpersonal experience.	.789	
	8. If I can't go online, I feel memory difficulties.	.788	
	9. If I can't go online, I feel uncomfortable.	.766	
	10. I use the internet when, I have a bad day.	.733	
	11. I use the internet when, I am angry.	.732	
	12. If I can't go online, I feel depressed.	.699	
	13. I use the internet when, I feel neglected.	.626	
	14. I use the internet when, not getting attention/importance.	.605	
	15. Online relationship can be more fulfilling than offline.	.596	
	16. I keep coming back online even though I am aware that I have spent a lot already on downloading apps (games, music).	.578	

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	17. When I am online, I feel totally absorbed.	.546	
2. Cognitive preoccupation & compulsive behaviour	18. My use of the internet sometimes seems beyond my control.	.808	.943
	19. I am friendlier online than in real life.	.711	
	20. I prefer communicating with other people online rather than face to face.	.669	
	21. I can get to know a person better on the internet than in person.	.663	
	22. I miss being online and feel lost if I can't access Facebook/ Twitter/any social media.	.642	
	23. I have made unsuccessful attempts to control my internet use.	.623	
	24. I have reduced my interaction with family and friends because of the time dedicated to being online.	.612	
	25. I keep checking my notifications even before some urgent task I have to take up.	.610	
	26. I find myself constantly thinking about the internet even when offline.	.593	
	27. My productivity at work has decreased since I have started enjoying being online.	.579	
	28. Though it is dangerous, I can't resist to check my notifications while driving.	.566	
	29. The 1st thing I do in the morning is checking my mails.	.553	
	30. I am more myself online than in real life.	.537	
	31. I eat food half-heartedly as internet occupies most of my attention.	.524	
	32. Internet makes me calm.	.517	
	33. I am not able to resist to upload my pictures on social media as I feel the more I get "likes" and "comments", the more people like me.	.508	

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	34. I spend less time doing activities which I previously found pleasurable like playing outdoor games.	.496	
3.Socialimpairment	35. The internet is more real than real life.	.725	.928
	36. I have more fun with the people online than others.	.692	
	37. I am used to sacrificing sleep time so I can spend more time online.	.682	
	38. Most of my friends I know are from online chatting.	.680	
	39. I have shared intimate secrets online.	.673	
	40. When I tried to cut down the excessive amount time I spend online, my finger shave done typing movements voluntarily or involuntarily.	.644	
	41. I got into trouble with the school/college authorities or my employer because of being online during school, college/job hours.	.639	
	42. People in my life complain to me about the amount of time I spend online.	.638	
	43. I have stopped going for movies in multiplexes, live shows like concerts and plays, or watching sports matches with friends because I feel I can watch them online.	.634	
	44. When I am offline, I am preoccupied with thoughts about things on the internet.	.586	
	45. I have missed social engagements/events because of online activities.	.559	
4.Occupational& interpersonal Relationship impairment	46. I stay online to escape offline pressure of occupational/ academic responsibilities.	.627	.837
	47. Due to my involvement with the internet, I have jeopardized or lost career opportunity.	.577	
	48. I say or do things on the internet that I could never do offline.	.558	

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	49. I neglected regular/ day-to-day household responsibilities to spend more time online.	.551	
	50. Last week, I got less than four hours sleep at night because I was using the net.	.548	
	51. I have lied to family, friends or a significant other like a therapist or an employer to conceal (hide) the amount of time I spend online or the type of content I access.	.538	
	52. I do not worry about relationship commitment when socializing online.	.509	
5. Perceived control of Internet overuse	53. People in my life complain that I do not participate in online chatting or I am rarely active on the internet.	.675	.647
	54. I do not stay longer on internet than I plan earlier.	.580	
	55. I do not like to get late for my work/school/college.	.565	
	56. I do not like to sacrifice my sleep for the internet/online activities.	.552	
	57. I do not neglect my household chores/office work/academic work because of internet.	.513	
6. Negative consequences of Internet overuse	58. Due to my involvement with the internet, I have jeopardized or lost a significant relationship.	.770	.838
	59. Due to my involvement with the internet, I have jeopardized or lost an educational opportunity.	.592	
	60. Due to my involvement with the internet, I have jeopardized or lost a job.	.586	
	61. I am unable to reduce the amount of time I spend online even though I want to.	.553	
	62. If I can't go online, I feel I cannot think straight.	.520	
7. Perceived advantages of Internet use	63. If it weren't for my computer, I wouldn't have any fun at all.	.666	.628
	64. The internet provides easy access to educational opportunities such as	.636	

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taking a distance learning class.

65. The internet helps with group communication. .486

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