



## DESIGNING AND VALIDATION OF QUESTIONNAIRE ON NIDRA VIPARYAYA

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## ABSTRACT

**Introduction:** *Ayurveda* is a time-tested science of life dealing with a healthy lifestyle, health upgrades, sustenance, disease prevention, diagnosis, and treatment. With the advent of time, the lifestyle, method of education, environment, and many things have changed including the research methodology. To make *Ayurveda* easily acceptable, as per the current trends in research, a review of previously proved fundamentals of *Ayurveda* in line with the currently followed method of research is essential to achieve easy application in the field of clinical research. **Objectives:** To frame and validate the questionnaire on *Nidra Viparyaya*. **Methods:** Designing the questionnaire and validating it through expert validation and statistical validation. **Result:** Validated questionnaire to evaluate the *Nidra Viparyaya*. **Conclusion:** The questionnaire showed relevance in the effective and efficient examination of the *Tara Tama Bhava* of the *Dosha* vitiated in the *Vyadhi samprapti*.

**Keywords:** Validation, Sleep, *Nidra Viparyaya* & Questionnaire

## INTRODUCTION

*Ayurveda* esteems a special emphasize *Nidra*, as one of the foremost fundamental components of healthy

life. *Ahara* (Food), *Nidra* (Sleep) & *Bramhacharya* (Celibacy), and the *Trayopastamba* are responsible

for the maintenance of life<sup>1</sup>. Metaphorically *Nidra* is explained as the 'Vaishnavi Maya', like Lord *Vishnu* nurtures living beings, *Nidra* nourishes the human body<sup>2</sup>. This highlights the importance of *Nidra* in *Swastha Purusha (Healthy Individual)*. The Properly endeavoured *Nidra* bestows, *Sukha* (Happiness), *Pushi* (Good Physique), *Bala* (Strength), *Vrushta* (Sexual power), *Gyana* (Knowledge), and *Jivita* (Long life). On the other hand, improper utilisation leads to *Dukha* (Unhappiness), *Karshya* (Emcitation), *Abala* (Weakness), *Klibata* (Impotence), *Agyana* (Ignorance), *Ajivita* (Death)<sup>3</sup>. *Nidanas* leading to the disease can be categorised as *Aharaja*, *Viharaja*, and *Manasika Nidana*. *Nidra* is a component of *Viharaja Nidana* which has to be assessed properly to evaluate the degree of *Dosha* vitiation. The word *Viparyaya* means reverse/ inverted/ perverse/ contrary/ misapprehension<sup>4</sup>. *Nidra Viparyaya* can be the term comprising all the aspects of changes in *Nidra* i.e., *Divaswapna*<sup>5</sup>, *Raatri Jagarana*<sup>6</sup>, and Changes in quality and quantity of sleep. Evolving with a tool for the assessment of *Nidra Viparyaya* has become imperative due to the lack of standardised methodology. This validated questionnaire may serve as a useful one in assessing the impact of *Nidra* in *Vyadi Utpatti*.

#### OBJECTIVES:

1. To frame questionnaire on *Nidra viparyaya*.
2. To do the scientific and statistical validation of the questionnaire in the assessment of *Nidra Viparyaya*.

#### METHODOLOGY:

Questionnaires are the easier and most commonly used tool for survey studies or observational studies covering large populations. In any case, the outcome of the study is invalid when the survey is composed insufficiently. Surveys ought to deliver substantial and solid statistic variable measures and surrender extensive and dependable person absurdities that self-report scales produce. The complete process of validating the questionnaire can be categorised under 2 points<sup>7</sup>.

1. Designing questionnaire
2. Validation of questionnaire

**DESIGNING QUESTIONNAIRE:** The questionnaire developed covers all the aspects of *Nidra Viparyaya* based on the classical references available.

#### STEPS OF DESIGNING THE QUESTIONNAIRE:

- a. Framing the study protocol
- b. Plan of analysis
- c. Compelling the information
- d. Designing the domains of the questionnaire
- e. Ordering of the questionnaire
- f. Scaling the questions
- g. Questionnaire

#### VALIDATION OF THE QUESTIONNAIRE:

The validation of the questionnaire for reliability and consistency involves the following steps.

1. Preparation of the questionnaire
2. Expert validation
3. Pilot study
4. Reliability test
5. Final reframing of the questionnaire

##### 1. Preparation of the questionnaire

Various aspects of *Nidra Viparyaya* with the available classic reference and the contemporary scales were taken and the questionnaire was framed containing 30 items. The prepared questionnaire comprised 3 domains i.e., quality of night sleep included 18 items, quantity of night sleep included 8 items and the domain day sleep included 4 items. The scaling for the questionnaire attributed was a 5point Likert scale.

##### 2. Expert validation

- The focus group discussion/ in-depth interviews with the subject experts.
- A panel of experts was identified and given the informed validation form defining the questionnaire.
- The weight of the questionnaire developed was examined in all the aspects to give expert opinions.

A total of 16 experts were identified from Major S.D. Singh P.G. Ayurvedic Medical College and Hospital, Farrukhabad; JSS ayurveda college, Mysore; BLDE Avs Ayurveda Mahavidyalaya, Bijapur; GAMC, Bangalore; DGMAMC Gadag; SDMCAH Hassan; VPSV Ayurveda College, Kottakkal; SJGAMC, Koppal; HAMCH, Bangalore; Dhanvantari ayurveda College, Siddapur; Govt. Ayurveda college, Kannur; KVG Ayurveda Medical College, Sullia; SJS ayurve-

da college Chennai; Shri Dhanwantari Ayurvedic College, Chandigarh; Shri Guru Gobind Singh Tricentenary University, Gurugram, Haryana; SVM Ayurveda medical college, Ilkal; and were sent the questionnaire for an informed opinion from experts with a track opinion provided with judgement and information regarding the assessment. The majority of the inputs were about defining the scale, to reframing the sentence in the question and changes were done in accordance with the requirement. After incorporating the expert opinion 30 questions were reduced to 24 and the 5point Likert scale was changed to a 4point Likert scale.

### 3. Pilot study

The expert-validated questionnaire was distributed to 30 in-patients of Sri Dharmasthala Manju-

natheshwara College of Ayurveda and hospital, Hassan, for the pilot study. The data obtained is tested for reliability by Cronbach's alpha, using the software 'Statistical Package for Social Sciences version 23 (SPSS IBM).

### 4. Reliability test

Cronbach's alpha is a reliability test providing the internal consistency of items 8. A value of alpha greater than 0.7 was acceptable and a value of alpha between 0.8 to 0.9 is having good consistency while validating the scales. The questionnaire tested for the reliability test showed 0.829 and all 24 items showed a result above 0.8 which means it is having good consistency. Hence no questions were deleted.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.829	.837	24

### QUALITY OF NIGHT SLEEP:

SL NO	QUESTIONS	CRONBACH'S ALPHA
1.	Do you have difficulty falling asleep?	.819
2.	Do you fall into deep sleep?	.824
3.	How often do you wake up while sleeping?	.825
4.	Do you have difficulty getting back to sleep after waking up in the middle of the night?	.818
5.	How many nights a week do you feel you have a sleep problem?	.818
6.	Like to sleep more after waking up?	.815
7.	Have difficulty got out of bed?	.807
8.	Do you feel changes in appetite after having disturbed sleep?	.829
9.	Poor sleep hampers routine- feels irritated, loose interest in daily work, etc.?	.823
10.	Are you satisfied with sleep?	.818
11.	Do you sleep soon after consuming food?	.819
12.	Habituated to drinking milk/alcohol or taking sleeping pills to get sleep?	.833

### QUANTITY OF NIGHT SLEEP:

SL NO	QUESTIONS	CRONBACH'S ALPHA
13.	How many hours do you sleep at night?	.827
14.	Your sleep hours are enough?	.813
15.	Do you prefer to work at night? i.e., study, watch movies, use mobile, etc.	.836
16.	Do you sleep late and wake up late?	.815
17.	Does your job involve shift work?	.836
18.	How often do you have changes in your shift?	.826
19.	What time do you go to sleep during weekdays?	.828
20.	What time do you go to sleep during weekends?	.831

**DAY SLEEP:**

SL NO	QUESTIONS	CRONBACH'S ALPHA
21.	Do you sleep during the daytime?	.822
22.	Do you sleep after having food?	.818
23.	How many naps do you usually take while working?	.827
24.	What's the duration of your nap?	.819

**5. Final reframing of the questionnaire**

The preliminary questionnaire contained 30 items under 3 domains, after expert validation the number of items were reduced to 24 and was finalized for the pilot study. After the pilot study all the questions were accepted based on Cronbach's al-

pha test analysis and the test showed good internal consistency, so all the questions were included.

**VALIDATED QUESTIONNAIRE**

- Never: None
- Rarely: 1-3 times a month
- Sometimes: 1-2 times a week
- Always: 4-6 times a week

**QUALITY OF NIGHT SLEEP<sup>9</sup>:**

1. Do you have difficulty falling asleep?
  1. Never
  2. Rarely
  3. Sometimes
  4. Always
2. Do you fall into deep sleep?
  1. Always
  2. Sometimes
  3. Rarely
  4. Never
3. How often do you wake up while sleeping?
  1. Never
  2. Rarely
  3. Sometimes
  4. Always
4. Do you have difficulty getting back to sleep after waking up in the middle of the night?
  1. Never
  2. Rarely
  3. Sometimes
  4. Always
5. How many nights a week do you feel you have a sleep problem?
  1. Never
  2. Less than 3 nights
  3. 4-6 nights
  4. All 7 nights
6. Like to sleep more after waking up?
  1. Never
  2. Rarely
  3. Sometimes
  4. Always
7. Have difficulty got out of bed?
  1. Never

**QUANTITY OF NIGHT SLEEP:**

13. How many hours do you sleep at night?
  1. More than 8 hours
  2. 6-8 hours
  3. 4-6 hours
  4. Less than 4 hours
14. Your sleep hours are enough?
  1. Always
  2. Sometimes
  3. Rarely
  4. Never
15. Do you prefer to work at night? i.e., study, watch movies, use mobile, etc.
  1. Never
  2. Rarely
  3. Sometimes
  4. Always
16. Do you sleep late and wake up late?
  1. Never
  2. Rarely
  3. Sometimes
  4. Always
17. Does your Job involve shift work?
  1. Day shift
  2. Night shift
  3. General shift
  4. Others, specify.
18. How often do you have a change in your Shift?
  1. Constant
  2. Once a month
  3. Once in 15 days
  4. Once a week
19. What time do you go to sleep during weekdays?
  1. Between 6 am – 12 pm
  2. Between 12 pm - 6 pm

<p>2. Rarely 3. Sometimes 4. Always</p> <p>8. Do you feel changes in appetite after having disturbed sleep? 1. Not experienced any change in appetite 2. My appetite is somewhat greater than usual. 3. My appetite is somewhat less than usual. 4. Have no appetite at all.</p> <p>9. Poor sleep hampers routine – feels irritated, loose interest in daily work, etc.? 1. Never 2. Rarely 3. Sometimes 4. Always</p> <p>10. Are you satisfied with sleep? 1. Always 2. Sometimes 3. Rarely 4. Never</p> <p>11. Do you sleep soon after consuming food? 1. Never 2. Rarely 3. Sometimes 4. Always</p> <p>12. Habituated to drinking milk/alcohol or taking sleeping pills to get sleep? 1. Never 2. Rarely 3. Sometimes 4. Always</p>	<p>3. Between 6 pm – 12 am 4. Between 12 am - 6 am</p> <p>20. When do you go to sleep during weekends? 1. Between 6 am – 12 pm 2. Between 12 pm - 6 pm 3. Between 6 pm – 12 am 4. Between 12 am - 6 am</p> <p><b>DAY SLEEP:</b></p> <p>21. Do you sleep during the daytime? 1. Never 2. Rarely 3. Sometimes 4. Always</p> <p>22. Do you sleep after having food? 1. Never 2. Rarely 3. Sometimes 4. Always</p> <p>23. How many naps do you usually take while working? 1. None 2. 1 3. 2 4. 3 / more</p> <p>24. What's the duration of your nap? 1. I don't sleep during the day. 2. Less than 30min 3. 30-60 min 4. 1-2 hours</p>
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## DISCUSSION

The questions included in the questionnaire were taken from the previous studies conducted based on the *Nidra*. As those questionnaires were not validated, by combining the questionnaires and the classical references the present questionnaire was framed. By calculating all the angles of each question, they were categorized under 3 domains and were given a 4-point scale for the appraisal. The challenges confronted were with regard to the scaling of the questionnaire and in assessing the same among the patients.

The impairment in the *Nidra* of an individual was not being taken note by the subjects legitimately and so the assessment of the *Nidra* as a *Nidana* was not much conceivable, but the subjects noticed the impairment in sleep as a *Lakshana*, associated with the chief complaint.

Based on the study it was observed that the majority of sleep disturbances occur due to occupation-induced stress in day-to-day life, as mental peace hampers the quality and quantity of sleep and in turn hampers the physical health equilibrium. Thereby making the study valid as it helps in the critical analysis of the quality and quantity of sleep in turn its effects as well as health and disease.

## CONCLUSION

The assessment of a *Vyadhi* and the prognosis of the *Vyadhi* has to be done based on the proportion of the *Dosha* vitiated and this includes the evaluation of all the *Nidanas* contributing to the *Dosha* vitiation. Tool to assess the involvement of *Dosha* needs to develop by considering the individual aspect of *Nidana*. Developing and validating the questionnaire considering various aspects of individual *Nidana* makes it feasible to assess the involvement of the *Doshas*. Hence

designing of the questionnaire and its validation is of paramount importance in *Ayurveda Anusandhana*. *Nidra* is one of such *Nidanas* having a major impact on both the *Shareera* and *Manas* favouring *Vyadhi Utpatti*<sup>10</sup>. *Nidra Viparyaya* has become the major factor in manifesting the *Vyadhi* in the present era, hence its accurate assessment gives the *Tara Tama* of the *Doshas* involved in the *Vyadhi Utpatti*. Scientific and statistical validation of the questionnaire on the assessment of *Nidra viparyaya* showed relevance in the effective and efficient assessment of *Nidana* and its impact on *Dosha*.

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