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**Kearifan Kesehatan Lokal: indigenous medical knowledge and practice for integrated nursing of the elderly with cardiovascular disease in Sumedang, West Java: towards transcultural nursing in Indonesia**  
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# CHAPTER VIII UTILISATION PATTERNS OF THE PLURAL NURSING SYSTEM

## 8.1 Bivariate Analysis of the Utilisation of the Plural Nursing System

### 8.1.1 Preparation of Data Analysis: Data Set and Variables

This Chapter presents the quantitative analysis of collected data during the household surveys conducted in the research area of four villages in the Sumedang Regency. The household surveys have been carried out as an extension of the qualitative research findings with a view to *measure and analyse* the spread of findings over the entire research area. A description is presented of the way in which the respondents with CVD of the sample surveys have reported their utilisation behaviour of the Plural Nursing System, sub-divided by the traditional, transitional and modern institutions and organisations. In order to understand the quantitative outcome of the data, different categories of variables are analysed which can potentially be identified as significant determinants of reported utilisation patterns of the respondents in Sumedang. In this way, the conceptual model with predisposing, enabling, and intervening variables is analysed as possible significant variables, *i.e.* determinants of dependent variables of utilisation of the Plural Nursing System.

The quantitative analysis uses data which has been completed by 232 households through information provided by the household head selected in Sumedang for the sample surveys. The Chapter continues to provide information on the data, which is subsequently entered into the electronic database, for the final analysis in SPSS. It is shown that the data are subject to variable analysis, in which the independent and intervening variables are distributed over the dependent variables through the method of cross-tabulation.

As regards the three categories of reported utilisation, respectively the Traditional Nursing Institution, and the Transitional Nursing and Modern Nursing organisations, with a view to adequately representing the reported utilisation behaviour of the Plural Nursing System, the significant variables which have been identified as influencing the traditional, transitional and modern nursing institutions and organisations are described as being distributed in the model of Mutual Correlations Analysis. In this way, the significant correlations are presented among all independent and intervening variables in relation to the utilisation variables. Subsequently, the results of the multivariate analysis using OVERALS are shown to identify the relative influence of the variables, *i.e.* the specific determinants of the reported utilisation behaviour of the plural nursing system by the respondents of the household surveys.

Finally, the multiple regression analysis is presented with a view to assessing the correlations and related weights among and between different categories of variables which are presented as blocks of variables in the model. This Chapter concludes with an interpretation and discussion of the results of the quantitative analysis in the structure of the final analytical model.

The samples collected in this study accommodate the geographical distribution of the Sumedang Regency, which is divided into four areas: Central Sumedang, and Southern Sumedang as shown in Table 8.1. As mentioned by the Head of the Village of Sumedang, an analysis of three geographical areas of Sumedang is necessary to be examined (pers. comm. 2017). The questionnaires were distributed between September-November 2017 in the four villages of the Sumedang Regency.

Table 8.1 Distribution of the Questionnaires over the Four Villages of Sumedang, also indicating the Time of the Interviews

Village	Number of Questionnaires	Interviewer	Time of Interview
Jayamekar	60	Raini, Listia, Oselia, Rizky, Fajar	7 September - 30 November 2017
Cipasang	56	Raini, Listia, Oselia, Rizky, Fajar	7 September - 30 November 2017
Situ	60	Raini, Listia, Oselia, Rizky, Fajar	7 September - 30 November 2017
Jatimulya	56	Raini, Listia, Oselia, Rizky, Fajar	7 September - 30 November 2017
Total	232		

Source: Household Survey (2017).

A total of 232 questionnaires were distributed over the respondents. The collected data from the samples were tabulated in the spreadsheet file with MS Excel. The tabulated data are examined through the processes of data cleaning and re-categorisation of some variables, according to the analytical model. The distribution of the data samples which are analysed in this study are shown in Table 8.2.

Table 8.2 Distribution of the Household Samples based on the Villages over the Geographic Area of the Samples and the Number of Distributed Samples

Name of the Village	Type of Area	Geographic Area of Sumedang	Total Number of Households Interviewed	
			N	%
Jayamekar	Highland/Rural	Southern Area	60	25.9
Cipasang	Highland/Rural	Southern Area	56	24.1
Situ	Lowland/Urban	Central Area	60	25.9
Jatimulya	Highland/Rural	Central Area	56	24.1
Total number of samples			232	100.0

Source: Fieldwork (2017).

### 8.1.2 Selected Variables of the Utilisation of the Plural Nursing System

The research uses a multivariate analytical model, adapted from the pioneering research by Slikkerveer (1990, 1995, 1999). Adapted models have been used for various studies in applied ethnoscience, which have been carried out by Agung (2005), Leurs (2010), Djen Amar (2010), Ambaretnani (2012), Chirangi (2013), Aiglsperger (2014), Erwina (2019), Saefullah (2019), De Bekker (2020) and Febriyanti (2021).

The multivariate model is the basis for the appropriate statistical analyses of the quantitative data collected about the utilisation behaviour of the plural nursing system by the community members in the four village samples in the Sumedang Regency in West-Java. The significant variables are included in the quantitative analyses of the bivariate analysis, mutual correlations analyses, and the multivariate and multiple regression analyses.

Table 8.3 Distribution of the Sample Villages over the Dependent Variable of the Utilisation of the Plura Nursing System (N=586)

Sample Village Variable	Utilisation of the Plural Nursing System							
	Traditional		Transitional		Modern		Total	
	N	%	N	%	N	%	N	%
Jayamekar	103	70.1	34	23.1	10	6.8	147	100.0
Cipasang	76	59.8	42	33.1	9	7.1	127	100.0
Situ	91	53.5	198	39.4	12	7.1	170	100.0
Jatimulya	81	57.0	198	38.7	37	4.2	142	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

(Pearson  $\chi^2=0.047$  & Cramer's  $V = 0.047$ )

Source: Computation of the Data Set from the Field Work (2017).

Adapted from the multivariate analytical model of Slikkerveer (1990, 1999), there are several variables which are determining peoples' behaviour in the utilisation of the plural nursing systems in the four villages of Sumedang in West-Java. The model emphasises the interactions between dependent variables of utilisation behaviour and the determinants of the independent and intervening variables, which are as follows: 1) Independent Variables: Predisposing Variables including Socio-Demographic and Psycho-Social Variables, Perceived Morbidity Variables, Enabling Variables, Institutional Variables, and Environmental Variables; 2) Intervening Variables; and 3) Dependent Variables.

The results of the univariate explorative analyses of each of the variables (N=232) demonstrates that some of the variables are statistically insignificant to be included in any of the bivariate or multivariate statistical analyses. From the original answer categories of all the 80 questions in the quantitative questionnaire which have been analysed, 25 variables, *i.e.* 22 independent and 3 dependent variables, are significant and the rest are not significant. The level of significance of the variables is described in detail below. The particular label assigned to each variable within the statistical programme for data analysis (using SPSS) is presented in apostrof after the name of the variable. Since virtually all the 733 survey respondents adhere to Islam, the variable 'religion' has been deleted from the data set.

Table 8.4 Range of Significant Values and their Interpretation

Significancy and Asymp Signicancy value ( $\chi^2$ )	Interpretation of value
$\chi^2 > 0.15$	not significant
$0.15 > \chi^2 > 0.10$	indication of significance
$0.10 > \chi^2 > 0.05$	weakly significant
$0.05 > \chi^2 > 0.01$	strongly significant
$0.01 > \chi^2 > 0.001$	very strongly significant
$\chi^2 < 0.001$	most strongly significant

Source: Slikkerveer (1995) ; Agung (2005); Leurs (2010); Djen Amar (2010); Ambaretnani (2012); Chirangi (2013) ; Aiglsperger (2014); Erwina (2019); Saefullah (2019); De Bekker (2020); and Febriyanti (2021).

Table 8.5 shows the 25 selected variables, categorised in independent, intervening and dependent variables, sub-divided in ctehries or blocks, *i.e.* socio-demographic, psycho-social, enabling, perceived morbidity, institutional, intervening and dependent variables.

Table 8.5 List of Categories or Blocks of the Variables and Variable Labels Selected on the Basis of the Results of the Qualitative Research for the Stepwise Analysis of Quantitative Data

Category or Blocks	Variable Name	Label
<b>INDEPENDENT VARIABLES</b>		
Socio-Demographic Variables:		
Block 1	Household relationships	<i>hhrel</i>
	Age	<i>age</i>
	Gender	<i>gender</i>
	Marital status	<i>marital</i>
	Profession	<i>prof</i>
	Vaccination history	<i>vac</i>
	Length of CVD	<i>lencvd</i>
Psycho-Social Variables :		
Block 2	Knowledge of CVD	<i>knowcvd</i>
	Knowledge of traditional nursing institutions	<i>knowtrad</i>
	Knowledge of transitional nursing organisations	<i>knowtrans</i>
	Knowledge of transitional nursing organisations for CVD prevention	<i>ranscvd</i>
	Belief in transitional nursing organisations for CVD prevention	<i>beltrad</i>
Perceived Morbidity Variables:		
Block 3	Perceived general health status	<i>perhe</i>
Enabling Variables:		
Block 4	Household head's income	<i>headinc</i>
	Cost of transitional nursing organisations	<i>costrans</i>
	Transportation cost to modern nursing organisations	<i>transmod</i>
	Health insurance ownership	<i>helins</i>
Institutional Variables:		
Block 5:	Geographical distance of modern nursing organisations	<i>modedist</i>
Environmental Variables:		
Block 6	Community nursing institutions: environmental-friendly Zonation locations of the community nursing institutions	<i>envloc</i> <i>zonaloc</i>
<b>INTERVENING VARIABLES</b>		
Block 7	<b>8.16a</b> Influence of government/public regulations on the utilisation of modern nursing organisations	<i>gremod2</i>
	<b>8.16b</b> Influence of government/public promotion on the Utilisation of home nursing for CVD	<i>gprohom3</i>
	<b>8.16c</b> Influence of government/public promotion on the utilisation of modern nursing organisations	<i>gpromod</i>
	<b>8.16d</b> Influence of government/public promotion on the utilisation of modern nursing organisations for CVD prevention	<i>gpromod3</i>
	<b>8.16e</b> Influence of government/public promotion on the utilisation of modern nursing organisations for CVD treatment	<i>gpromod4</i>
Block 8	Utilisation of Traditional Nursing Institutions	<i>Trad</i>
Block 9:	Utilisation of Transitional Nursing Organisations	<i>Trans</i>
Block 10	Utilisation of Modern Nursing Organisations	<i>Mod</i>

Source: Computation of the Data Set from the the Field Work (2017).

### 8.1.3 The Behavioural Patterns of the Plural Nursing System

Based on the data analysis towards the quantitative surveys of 232 households from the four village samples, Table 8.5 indicates the preferences of the community members in four villages in their utilisation behaviour towards the plural nursing systems. As Slikkerveer (1990: 226) observes: ‘*Such multiple utilisation or healer shopping may be simultaneous or successive and may involve different nursing institutions or be within the same system*’. Following the limited patterns of repeated contacts with one nursing institution, the present study, however, focuses on the patterns of multiple utilisation of different nursing institutions and excludes a quantitative description of patterns of multiple utilisation within the systems. In addition to the 267 ‘patients’ of the sample, who took a first step within the search for treatment, 117 (36.1%) contacted the plural nursing system as a second step, while 11 (3.4%) patients took three steps, thereby using each of the available nursing institutions and organisations in order to receive treatment.

Figure 8.1 illustrates the decisions made by the patients of the sample towards seeking treatment and contacting the different nursing institutions and organisations operating in the research area. In view of the different steps the respondents took in order to seek treatment, the patterns of utilisation of the plural nursing system maintained by all 263 ‘action patients’ of the sample amount to a total of 586 utilisation rates. In particular, the respondents of Sumedang who had experienced an episode of illness during the recall period and decided to seek action in a way to receive treatment contacted the plural nursing institution available in the research area a total of 586 times: namely, a first time in 263 cases, a second time in 209 cases and a third time in 114 cases. As Slikkerveer (1990: 231) explains: ‘*It is clear that the shift in utilisation rates is caused by multiple utilisation and referral of patients between the systems for the treatment of the same illness episode*’. Table 8.9 sheds light on the rates of utilisation of the plural nursing institutions. While ‘non-action patients’ did not seek treatment for their illness at any available institution of organisation, patients who successively use different nursing institutions and organisations have been identified as ‘Flow-Through Cases’ (cf. Slikkerveer 1990).

While Table 8.6 shows the distribution of the two categories of 267 patients into 4 ‘non-action patients’ and 263 ‘action patients’, *i.e.* patients actively seeking treatment at the plural nursing system during the preceding 12 months, Table 8.7 shows the first step utilisation of the three nursing institutions and organisations in Sumedang by the ‘action patients’ during the Preceding 12 months. From these 263 ‘action patients’, 209 ‘action-patient’ reported a secons step, and 114 ‘action-patients’ reported a third step for treatment.

As shown in Table 8.9, from the 263 ‘action-patients’ of the sample, , nearly one-fifth (19.7%, n=54) took one step to contact the plural nursing institution one time, while more than three-fourth (79.5%, n=209) took a second step to seek treatment. Thereafter, almost half (43.3%, n=114) of the patients took the third step. In view of the availability of three different nursing institutions and organisations in the research area, none of the eleven respondents, who contacted the plural nursing system three times, identified as ‘flow-though cases’, took an additional to receive further treatment

Following the calculation of the rate of utilisation of the plural nursing system operating in the research area, Table 8.8 shows the number of reported steps taken by 263 ‘action-patients’ during the preceding 12 months.

Table 8.9 explains the process of illness behaviour of the 263 ‘action-patients’ of the sample and the calculation on the basis of their illness steps and ‘flow-through cases’ of the frequency of their 586 utilisation rates of the different nursing institutions and organisations in Sumedang.

Table 8.6 Categories of Patients from the Survey Distributed according to the Reported Type of Action or Non-Action Taken to Obtain Treatment during the Preceding 12 Months

Category of Patients	N	%
Non-action patients	4	1.49
Action patients	263	98.51
Total	267	100.00

Source: Computation of the Data Set from the Field Work (2017).

Table 8.7 First step Utilisation of the Three Nursing Institutions and Organisations in Sumedang by the Action Patients during the Preceding 12 months

Number of Action Patients		Type of Nursing Institution					
		Traditional		Transitional		Modern	
N	%	N	%	N	%	N	%
263	100.0	18	6.8	32	12.2	213	81.0

Source: Computation of the Data Set from the Field Work (2017).

Table 8.8 Number of Reported Steps Taken by 263 'Action-Patients' during the Preceding 12 Months

Number of Reported Illness Steps	Number of Patients	
	N	%
1 illness step	54	20.5
2 illness steps	95	36.1
3 illness steps	114	43.4
Total	263	100.0

Source: Computation of the Data Set from the Field Work (2017).

Table 8.9 Flow-Through Cases of Patients: Illness Behaviour of the 267 Patients of the Sample and the Resulting Total Number of 586 Utilisation Rates, Distributed over the Plural Nursing System in Sumedang

Total No. of patients	Non-action patients	Action patients						Plural Nursing System	Total Number of utilisation rates	
			One step	Flow-through cases	Two steps	Flow-through cases	Three steps		N	%
N	N	N	N	N	N	N	N	N	%	
267	4									
			18	11	81	68	58	TNI	157	26.8
		263	32	18	33	36	34	TNO	99	16.9
			213	180	95	14	22	MNO	330	56.3
267	4	263	263		209		114		586	100.0

Source: Computation of the Data Set from the Field Work (2017).

The number of patients reveals the quantity of respondents, who reportedly took only one step within the process of nursing utilisation. In the same fashion, all respondents who took two steps have subsequently been asked to report whether they had taken a third step in order to seek treatment. Likewise, respondents had to select an answer from the categories 'traditional nursing institutions', 'transitional nursing organisations', 'modern nursing organisations' or 'no further step taken'. The number of patients, who chose to take no further step highlights the quantity of respondents who took two steps within the process of seeking treatment, while all remaining patients have been categorised as respondents who took three steps as a way to receive treatment. Since respondents could take a maximum of three steps, notably conforming to the number of nursing institutions and organisations available in the research area, no further questions have been asked.

In order to elaborate the dependent variables, the different steps during which the patients contacted the plural nursing institutions have been translated into an overall rate of utilisation (*cf.* Table 8.9). Thereafter, the dependent variables have been calculated on the basis of the utilisation rates reported by all patients of the sample. Since the requirements of the subsequent statistical bivariate and multivariate analyses differ to a considerable extent, the final dependent variables have been constructed in two different ways.

The dependent variables, which are used in the bivariate analysis of patterns of nursing utilisation behaviour, have been incorporated in the overall variable 'Utilisation of the Plural Nursing System'. The variable is measured at the nominal level and eventually came to comprise the following answer categories: 'utilisation of the traditional nursing institutions'; 'utilisation of the transitional nursing

organisations’; and ‘utilisation of the modern nursing organisations’. However, in order to meet the requirements of the multivariate analysis of the data, the dependent variables are arranged into three separate variables, namely ‘Utilisation of the Traditional Nursing Institutions’, ‘Utilisation of the Transitional Nursing Organisations’ and ‘Utilisation of the Modern Nursing Organisations’.

Table 8.10 Frequency of the Utilisation of the Plural Nursing System by the 263 Action Patients in Sumedang (N=586)

Number of Action patients	Number of steps	Number of visits to the Plural Nursing System						Total number of visits	
		traditional nursing institutions		transitional nursing organisations		modern nursing organisations		N	%
		N	%	N	%	N	%		
54	1	33	61.1	18	33.3	3	5.5	54	100.0
95	2	118	62.1	60	31.6	12	6.3	190	100.0
114	3	200	58.7	120	35.0	22	6.1	342	100.0
263		351	59.9	198	33.8	37	6.3	586	100.0

Source: Computation of the Data Set from the Field Work (2017).

In general, 9.22% (n=54) of the utilisation rates refer to a single contact with the plural nursing system, 32.42% (n=190) of the utilisation rates imply a double contact with the plural nursing system and 58.36% (n=342) of the utilisation rates relate to the number of patients who took three steps in order to seek treatment. Furthermore, the majority of the utilisation rates reported by the patients (59.9%, n=351) refers to contacts with the traditional nursing institutions as the most commonly used nursing institutions in the research area. Meanwhile, the transitional nursing organisations’ utilisation rates in this respect show a slightly smaller percentage of utilisation rates (33.8%, n=198). Accordingly, only 6.3% (n=37) of contacts between patients and the plural nursing system relate to patterns of utilisation of the modern nursing organisations, which hereby forms the least frequently contacted nursing institution and organisation in the research area.



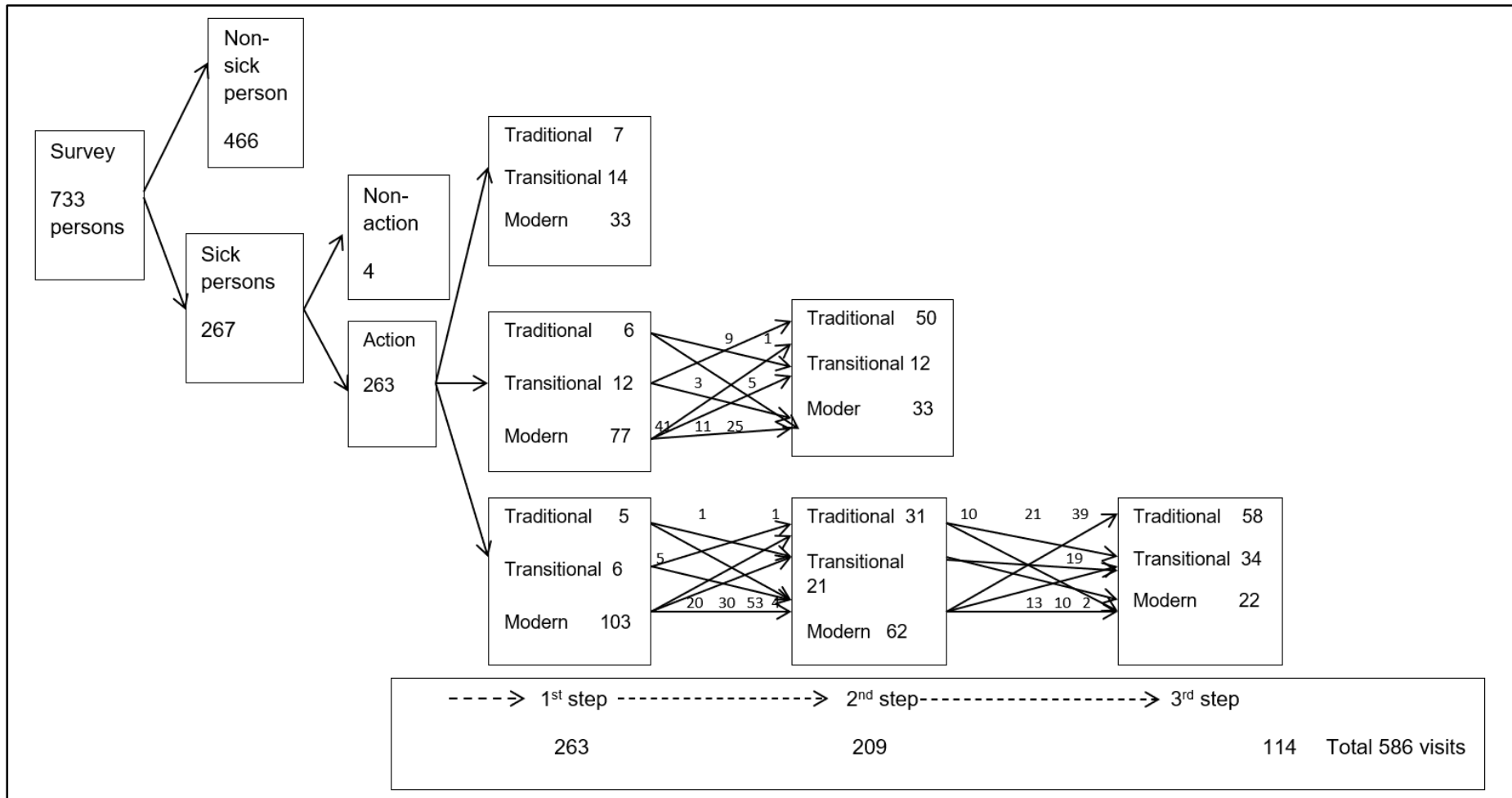


Figure 8.1 Decision Tree Showing the Movement of Patients in the Survey Through the Plural Nursing System in Sumedang  
 Source: Computation of the Data Set from the Field Work (2017).

### 8.1.4 Results of the Bivariate Analysis

#### Independent Variables

##### *Socio-Demographic Variables*

The household heads formed the majority of the respondents (79.9%) who use the traditional nursing institution compared to other family members. Meanwhile spouses tend to choose the transitional nursing institution (78.6%) compared to traditional nursing institutions (14.9%) or modern nursing institutions (6.5%). Within the block of socio-demographic factors, the distribution of the variable ‘Household relationship’ ( $\chi^2 = .000$ ) over the dependent variables demonstrates a most strongly significant relationship, rendering the attention in the bivariate analysis primarily on the reported utilisation of the traditional nursing institution in the research area.

Table 8.11a Distribution of the Socio-Demographic Variable of ‘Household Relationship’ of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Household head	301	79.2	56	14.7	23	6.1	380	100.0
Spouse	25	14.9	132	78.6	1	6.5	168	100.0
Son	0	0.0	1	100.0	0	0.0	1	100.0
Daughter	4	44.4	4	44.4	1	11.1	9	100.0
Father	2	66.7	1	33.3	0	0.0	3	100.0
Mother	13	68.4	4	21.1	2	10.5	19	100.0
Mother in law	3	100.0	0	0.0	0	0.0	3	100.0
Other kin	3	100.0	0	0.0	0	0.0	3	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson’s  $\chi^2$  (Asympt. Sig., 2-sided) = .000/Cramer’s V = .443

As regards the bivariate analysis of the socio-demographic variable *household relationship*, Table 8.11a shows the most strongly significant correlation between the variable *household relationship* and the differential utilisation of the plural nursing system ( $\chi^2 = .000$ ), supported by a strong association of the Cramer’s V=.423. Table 8.11a also shows that more than three-fourth (79.2%, n=301) of respondents include the household heads reporting the highest utilisation of traditional nursing institutions, followed by more than two-third (68.4%, n=13) of mothers for whom their highest utilisation of the traditional nursing institutions is reported. In comparison, for more than two-third (78.6%, n=132) of spouses the highest utilisation of the transitional nursing organisations is reported, while for more than one-tenth-third (10.5%, n=2) of spouses the highest utilisation of the modern nursing organisations is reported.

Table 8.11b Distribution of the Socio-Demographic Variable of ‘Gender’ of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Male	161	74.5	46	21.3	9	4.2	261	100.0
Female	190	51.4	152	41.1	28	7.6	370	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson’s  $\chi^2$  (Asympt. Sig., 2-sided) = .000/Cramer’s V = .228

Source: Computation of the Data Set from the Field Work (2017).

Table 8.11b also shows that three-fourth of males (74.5%, n=161) and more than half (51.4%, n=190) are reported to use the traditional nursing institution, while the reported proportion of females using the transitional nursing organisations is twice of that of males ((41.1% and 21.3).

Table 8.11c Distribution of the Socio-Demographic Variable of ‘Age’ of the Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Age								
30-35	3	42.9	4	57.1	0	0.0	7	100.0
36-40	1	100.0	0	0.0	0	0.0	1	100.0
41-45	4	50.0	4	50.0	0	0.0	8	100.0
46-50	8	57.1	5	35.7	1	7.1	14	100.0
51-55	22	29.3	4	65.3	4	5.3	75	100.0
56-60	41	70.7	13	22.4	4	6.9	58	100.0
61-65	63	49.6	54	42.5	10	7.9	127	100.0
66-70	66	71.7	22	23.9	4	4.3	92	100.0
71-75	82	70.7	29	25.0	5	4.3	116	100.0
76-80	34	75.6	6	13.3	5	11.1	45	100.0
81-85	17	68.0	6	24.0	2	8.0	25	100.0
86+	10	55.6	6	33.3	2	11.1	18	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson’s  $\chi^2$  (Asympt. Sig., 2-sided) =.000/Cramer’s V=.242

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the socio-demographic variable *age*, Table 8.11c shows the most strongly significant correlation reported for the age category of the respondents and their differential of the plural nursing system) ( $\chi^2 = .000$ , and a moderate association of the Cramer’s V=.242.

Table 8.11c also shows that almost three-quarter (75.6%, n=34) of the respondents in the 76-80 age category, followed by almost three-quarter (71.7%, n=66) of respondents in the 66-70 age category is reporting the second highest utilisation of traditional nursing institutions. In comparison, almost two-third (65.3%, n=4) of the respondents in the 51-55 age category is reporting the highest utilisation of the transitional nursing organisations, while more than one-tenth (11.1%, n=45) of the respondents in the 76-80 age category is reporting the highest utilisation of the modern nursing organisations. In general, Table 8.11c shows, that in all age categories, traditional nursing institutions are the first choice reported by more than half (59.9%, n=351) of the respondents, compared to one-third (33.8%, n=198) of respondents reporting the choice of the transitional nursing organisations.

Table 8.11d Distribution of the Socio-Demographic Variable of ‘Marital Status’ of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Marital Status								
Single	3	75.9	1	25.0	0	0.0	4	100.0
Married	176	51.9	143	42.2	20	5.9	339	100.0
<i>Monogamy</i>								
Married	12	54.5	10	45.5	0	0.0	22	100.0
<i>Polygamy</i>								
Divorced	4	100.0	0	0.0	0	0.0	4	100.0
Widow	148	73.3	38	18.8	16	7.9	202	100.0
Widower	8	53.3	6	40.0	1	6.7	15	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson’s  $\chi^2$  (Asympt. Sig., 2-sided) =.000/Cramer’s V=.177

As regards the bivariate analysis of the socio-demographic variable *marital status*, Table 8.11d shows a most strongly significant correlation between the marital status of the respondents and their differential utilisation of the plural nursing system ( $\chi^2 = .000$ ), and shows a weak association of the Cramer's  $V = .177$ . Table 8.11d also shows that three-fourth (75.9%,  $n=3$ ) of the respondents with a single marital status is reporting the highest utilisation of traditional nursing institutions, followed by nearly three-fourth (73.3%,  $n=148$ ) of the respondents with a widow marital status similarly reporting the second highest utilisation of the traditional nursing institutions. In contrast, nearly one-half (45.5%,  $n=10$ ) of the respondents with a married marital status, as well as nearly one-tenth (7.9%,  $n=16$ ) of the respondents with a widow marital status is reporting the highest utilisation of the modern nursing organisations. In general, more than a half of the married monogamy respondents (51.9%,  $n=176$ ) report utilising the traditional nursing institutions.

Table 8.11e Distribution of the Socio-Demographic Variable of 'Profession' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Unemployed	107	73.8	30	20.7	8	5.5	145	100.0
Housewife	64	39.5	83	51.2	15	9.3	162	100.0
Peasant	27	61.4	13	29.5	4	9.1	44	100.0
Farmer	57	65.5	27	31.0	3	3.4	87	100.0
Industrial labourer	6	85.7	1	4.3	0	0.0	7	100.0
Entrepreneur	40	70.2	17	29.8	0	0.0	57	100.0
Private empl.	2	66.7	0	0.0	1	33.3	3	100.0
Driver	3	50.0	3	50.0	0	0.0	6	100.0
Retired	14	77.8	3	16.7	1	5.6	18	100.0
Other	31	54.4	21	36.8	5	8.8	57	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .000/Cramer's  $V = .224$

Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the variable *profession*, Table 8.11e shows the most strongly significant correlation between of the respondents profession and their differential utilisation of the plural nursing system ( $\chi^2 = .000$ ), and a moderate association of the Cramer's  $V = .224$ . Table 8.11e also shows that more than four-fifth (85.7%,  $n=6$ ) of the respondents with the profession of industrial labourer is reporting the highest utilisation of traditional nursing institutions, while more than three-fourth (77.8%,  $n=14$ ) of respondents with a retired profession is similarly reporting the highest utilisation of traditional nursing institutions. In addition, more than half (51.2%,  $n=83$ ) of the respondents with the profession of housewife is reporting the highest utilisation of transitional nursing organisations, compared to nearly one-tenth (9.3%,  $n=15$ ) of them from the same category reporting the highest utilisation of the modern nursing organisations. Three-fourth (73.8,  $n=107$ ) of them who are unemployed report the highest utilisation of the traditional nursing institutions.

Table 8.11f Distribution of the Socio-Demographic Variable of 'Vaccination History' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	N	%	
No vaccine	42	82.4	7	13.7	2	3.9	51	100.0
Not completed Vaccine	309	57.8	191	35.7	35	6.5	535	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .003/Cramer's  $V = .142$

Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the socio-demographic variable *vaccination history*, Table 8.11f shows a very strongly significant correlation between the vaccination history of the respondents and their utilisation of the plural nursing system ( $\chi^2 = .003$ ), and a weak association of the Cramer's  $V = .305$ . Table 8.11f also shows that more than four-fifth (82.4%,  $n=42$ ) of the respondents with no vaccine is reporting the highest utilisation of traditional nursing institutions, while just more than one-third (35.7%,  $n=191$ ) of respondents with no completed vaccine is reporting the highest utilisation of transitional nursing institutions. In addition, more than half (6.5%,  $n=35$ ) of the respondents with no completed vaccine is reporting the highest utilisation of modern nursing organisations.

Table 8.11g Distribution of the Socio-Demographic Variable of 'Length of CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Length of CVD								
less than 1 week	230	64.8	106	29.9	29	5.4	355	100.0
1-2 weeks	6	60.0	1	10.0	3	30.0	10	100.0
3-4 weeks	5	71.4	2	28.6	0	0.0	7	100.0
5-6 weeks	110	51.4	89	41.6	15	7	214	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .000 / Cramer's  $V = .185$

Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the socio-demographic variable *length of CVD*, Table 8.11g shows the most strongly significant correlation between the place of birth of the respondents and their differential utilisation of the plural nursing system ( $\chi^2 = .000$ ), and a weak association of the Cramer's  $V = .185$ . Table 7.2d also shows that more than two-third (71.4%,  $n=71$ ) of the respondents with a length of CVD of 3-4 weeks is reporting the highest utilisation of traditional nursing institutions. In comparison, one-fifth (41.6%,  $n=89$ ) of the respondents with a length of CVD of 5-6 weeks is reporting the highest utilisation of the transitional nursing organisations, while less than one-third (30.0%,  $n=3$ ) of the respondents with a length of CVD of 1-2 weeks is reporting the highest utilisation of the modern nursing organisations.

### Psycho-Social Variables

As regards the bivariate analysis of the psycho-social variable *knowledge of CVD*, Table 8.12a shows the most strongly significant correlation between knowledge of CV' of the respondents and their differential utilisation of the plural nursing system ( $\chi^2 = .000$ ), and a weak association with the Cramer's  $V = .161$ .

Table 8.12a Distribution of the Psycho-Social Variable of 'Knowledge of CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Knowledge of CVD								
Very little	9	75.0	46	21.3	9	4.2	261	100.0
Little	75	66.4	33	29.2	5	4.4	113	100.0
Average	195	59.8	102	31.3	29	8.9	326	100.0
Much	59	48.4	60	49.2	3	2.5	122	100.0
Very much	13	100.0	0	0.0	0	0.0	13	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .000 / Cramer's  $V = .161$

Source: Computation of the Data Set from the Field Work (2017).

Table 8.12a also shows that all (100.0%, n=13) of the respondents with very much knowledge of CVD is reporting the highest utilisation of traditional nursing institutions, while three-fourth (75.0%, n=9) of the respondents with very little knowledge of CVD is reporting the highest utilisation of traditional nursing institutions. In comparison, nearly one-half (49.2%, n=60) of the respondents with much knowledge of CVD is reporting the highest utilisation of transitional nursing institutions, while less than one-tenth (8.9%, n=29) of the respondents with average knowledge of CVD is reporting the highest utilisation of the modern nursing organisations.

Table 8.12b Distribution of the Psycho-Social Variable of 'Knowledge of Traditional Nursing Institution' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Knowledge of Traditional Nursing Institution	N	%	N	%	N	%	N	%
None	15	93.8	1	6.3	0	0.0	16	100.0
Very little	40	63.5	17	27.0	6	9.5	63	100.0
Little	143	57.9	92	37.2	12	4.2	63	100.0
Average	94	53.4	68	38.6	14	8.0	176	100.0
Much	47	66.2	20	28.2	4	5.6	71	100.0
Very much	12	92.3	0	0.0	1	7.7	13	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) =.012/Cramer's V=.139

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the psycho-social variable *knowledge of traditional nursing institutions*, Table 8.12b shows the significant correlation ( $\chi^2 =.012$ ) and a weak association of Cramer's V=.139. Table 8.12b also shows that nearly all (93.8%, n=15) of the respondents with no knowledge of the traditional nursing institutions is reporting their highest utilisation of nursing institutions, while nearly three-fourth (38.6%, n=68) of the respondents with average knowledge of the traditional nursing institutions is reporting the highest utilisation of transitional nursing institutions.

In addition, nearly one-tenth (9.5%, n=6) of the respondents with very little knowledge of traditional nursing institutions is reporting the highest utilisation of the modern nursing organisations.

Table 8.12c Distribution of the Psycho-Social Variable of 'Knowledge of Traditional Nursing Institutions for CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Knowledge of Traditional Nursing Institutions for CVD	N	%	N	%	N	%	N	%
None	12	85.7	2	14.3	0	0.0	14	100.0
Very little	57	66.3	22	25.6	7	8.1	86	100.0
Little	141	56.9	93	37.	14	4.2	248	100.0
Average	83	53.2	62	39.7	11	7.1	156	100.0
Much	46	66.7	19	27.5	4	5.8	69	100.0
very much	12	92.3	0	0.0	1	7.7	13	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) =.036/Cramer's V =.128

Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the psycho-social variable *knowledge of traditional nursing institutions for CVD*, Table 8.12c shows a strongly significant correlation ( $\chi^2 =.036$ ) and a weak

association with the Cramer's  $V=.128$ . Table 8.12c also shows that nearly all (92.3%,  $n=12$ ) of the respondents with very much knowledge of traditional nursing institutions for CVD are reporting their highest utilisation of traditional nursing institutions, followed by more than two-fifth (39.7%,  $n=62$ ) of the respondents with average knowledge of traditional nursing institutions for CVD is reporting the highest utilisation of transitional nursing organisations. In contrast, Table 8.12c also shows that nearly one-tenth (8.1%,  $n=7$ ) of the respondents with very little knowledge of of traditional nursing institutions for CVD is reporting the highest utilisation of modern nursing organisations.

Table 8.12d Distribution of the Psycho-Social Variable of 'Knowledge of Transitional Nursing Organisations' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Knowledge of Transitional Nursing Institutions								
None	14	73.7	4	21.1	1	5.3	19	100.0
Very little	33	58.9	15	26.8	8	14.3	56	100.0
Little	131	64.9	59	29.2	12	5.9	202	100.0
Average	116	57.1	77	37.9	10	4.9	203	100.0
Much	47	49.0	43	44.8	6	6.3	96	100.0
Very much	10	100.0	0	0.0	0	0.0	10	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) =.007/Cramer's  $V=.143$

Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the psycho-social variable *knowledge of transitional nursing organisations*, Table 8.12d shows a strongly significant correlation ( $\chi^2=.007$ ) and a weak association with the Cramer's  $V=.143$ . Table 8.12d also shows that all (100.0%,  $n=10$ ) of the respondents with very much knowledge of transitional nursing organisations are reporting their highest utilisation of traditional nursing institutions. In addition, nearly half (44.8%,  $n=43$ ) of the respondents with much knowledge of transitional nursing organisations is reporting the highest utilisation of transitional nursing organisations. In contrast, Table 8.12c also shows that more than one-tenth (14.3%,  $n=8$ ) of the respondents with very little knowledge of of transitional nursing organisations is reporting the highest utilisation of modern nursing organisations.

Table 8.12e Distribution of the Psycho-Social Variable of 'Knowledge of Transitional Nursing Organisations for CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Knowledge of Transitional Nursing Organisations for CVD								
None	14	73.7	4	21.1	1	5.3	19	100.0
Very little	34	58.6	17	29.3	7	12.1	58	100.0
Little	135	63.7	62	9.2	15	7.1	212	100.0
Average	112	58.3	71	37.0	9	4.7	192	100.0
Much	46	48.4	44	46.3	5	5.3	95	100.0
Very much	10	100.0	0	0.0	0	0.0	10	100.0
Total	351	9.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) =.016/Cramer's  $V=.136$

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the psycho-social variable *knowledge of transitional nursing institutions for CVD*, Table 8.12e shows a significant correlation ( $\chi^2=.016$ ) and an average association

of the Cramer's  $V=.136$ . Table 8.12e also shows that all (100.0%,  $n=10$ ) of the respondents with very much knowledge of transitional nursing organisations for CVD is reporting the highest utilisation of traditional nursing institutions, while nearly half (46.3%,  $n=44$ ) of the respondents with much knowledge of transitional nursing organisations for CVD reports the highest utilisation of transitional nursing organisations. In contrast, more than one-tenth (12.1%,  $n=7$ ) of the respondents with very little knowledge of transitional nursing organisations for CVD reports the highest utilisation of modern nursing organisations.

Table 8.12f Distribution of the Psycho-Social Variable of 'Belief in Traditional Nursing Institution as a Prevention of CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Belief in Traditional Nursing Institution as a Prevention of CVD								
None	9	81.8	1	9.1	1	9.1	11	100.0
Very little belief	72	59.5	41	33.9	8	6.6	121	100.0
A little belief	91	59.1	54	35.1	9	5.8	154	100.0
Average	89	53.3	71	42.5	7	4.2	167	100.0
Much belief	85	66.4	32	4.2	12	9.4	128	100.0
Very much belief	5	100.0	0	0.0	0	0.0	5	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) =.041/Cramer's  $V=.127$

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the psycho-social variable *belief in traditional nursing institution as a prevention of CVD*, Table 8.12f shows a strongly significant correlation ( $\chi^2=.041$ ) and a weak association of Cramer's  $V=.127$ . Table 8.12f also shows that all (100.0%,  $n=15$ ) of the respondents with very much belief in traditional nursing institution as a prevention of CVD, and that two-third (66.4%,  $n=85$ ) of the respondents with much belief in traditional nursing institution as a prevention of CVD are reporting the highest utilisation of the traditional nursing institutions. In contrast, less than one-tenth (9.4%,  $n=9$ ) of the respondents with much belief in traditional nursing institution as a prevention of CVD reports the highest utilisation of modern nursing organisations.

Table 8.12g Distribution of the Psycho-Social Variable of 'Belief in Traditional Nursing Institution as a Treatment of CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Belief in Traditional Nursing Institution as a Treatment of CVD								
None	11	84.6	1	7.7	1	7.7	13	100.0
Very little belief	24	54.5	17	38.6	3	6.8	44	100.0
A little belief	138	60.0	76	33.0	16	7.0	230	100.0
Average	79	52.7	65	43.3	6	4.0	150	100.0
Much belief	90	64.7	38	27.3	11	7.9	139	100.0
Very much belief	9	90.0	1	10.0	0	0.0	10	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) =.055/Cramer's  $V=.124$

Source: Computation of the Data Set from the Field Work (2017).



Regarding the bivariate analysis of the psycho-social variable *belief in traditional nursing institution as a treatment of CVD*, Table 8.12g shows a strongly significant correlation ( $\chi^2 = .055$ ) and a weak association of the Cramer's  $V = .124$ . Table 8.12g also shows that nearly all (90.0%,  $n=9$ ) of the respondents with very much belief in traditional nursing institution as a treatment of CVD are reporting their highest utilisation of traditional nursing institutions, while more than two-fifth (43.3%,  $n=65$ ) of the respondents with average belief in traditional nursing institution as a treatment of CVD is reporting the highest utilisation of transitional nursing organisations. In contrast, less than one-tenth (7.9%,  $n=11$ ) of the respondents with much belief in traditional nursing institution as a treatment of CVD is reporting the highest utilisation of modern nursing organisations.

### Perceived Morbidity

Table 8.13 Distribution of the Perceived Morbidity Variable of 'Perceived General Health Status' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Perceived General Health Status								
Very bad	2	66.7	0	0.0	1	33.3	3	100.0
Bad	90	72.6	27	21.8	7	5.6	124	100.0
Average	107	52.7	71	38.9	17	8.4	203	100.0
Good	137	58.1	89	37.7	10	4.2	236	100.0
Excellent	11	78.6	2	14.3	1	7.1	14	100.0
Total	347	59.8	197	34.0	36	6.2	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .003 / Cramer's  $V = .141$

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the variable of *perceived morbidity*, Table 8.13 shows a very strongly significant correlation between the perceived morbidity of the respondents and their differential utilisation of the plural nursing system ( $\chi^2 = .030$ ), and a weak association of the Cramer's  $V = .141$ . Table 8.13 also shows that more than three-fourth (78.6%,  $n=11$ ) of the respondents with an excellent perceived general health status is reporting their highest utilisation of traditional nursing institutions, while more than two-fifth (43.3%,  $n=65$ ) of the respondents with an average perceived general health status is reporting the highest utilisation of transitional nursing organisations, compared to nearly one-tenth (8.4%,  $n=17$ ) of the respondents with a similar average perceived general health status is reporting the highest utilisation of modern nursing organisations.

### Enabling Variables

Table 8.14a Distribution of the Enabling Variable of 'Monthly Income of Household Head' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Monthly Income of Household Head								
None	14	63.6	7	31.8	1	4.5	22	100.0
1 – 1.000.000 Rp	202	62.9	95	26.9	24	7.5	321	100.0
1.000.001 – 2.000.000 Rp	56	54.4	41	39.8	6	5.8	103	100.0
2.000.001 – 3.000.000 Rp	32	45.1	37	52.1	2	2.8	71	100.0
3.000.001 – 4.000.000 Rp	31	63.3	15	30.6	3	6.1	49	100.0
More than 4.000.000 Rp	16	80.0	3	15.0	1	5.0	20	100.0
Total	170	59.4	97	33.9	19	6.6	286	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .035 / Cramer's  $V = .129$

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the variable *monthly income of household head*, Table 8.14a shows a strong significant correlation between the perceived morbidity of the respondents and their differential utilisation of the plural nursing system ( $\chi^2 = .035$ ), and a weak association of the Cramer's  $V = .129$ . Table 8.14a also shows that four-fifth (80.0%,  $n = 16$ ) of the respondents with a monthly income of more than 4.000.000 Rp is reporting their highest utilisation of the traditional nursing institutions. In comparison, more than half (52.1%,  $n = 37$ ) of the respondents with a monthly income of 2.000.001 – 3.000.000 Rp is reporting the highest utilisation of the transitional nursing organisations. In contrast, less than one-tenth (7.5%,  $n = 24$ ) of the respondents with a monthly income of 1.000.001 – 2.000.000 Rp is reporting the highest utilisation of the modern nursing organisations.

Table 8.14b Distribution of the Enabling Variable of 'Cost of the Transitional Nursing Organisations' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Cost of of Transitional Nursing Institutions	N	%	N	%	N	%	N	%
Free of charge	32	47.8	30	44.8	5	7.5	67	100.0
Very cheap	85	63.9	41	30.8	7	5.3	133	100.0
Cheap	132	54.3	93	38.3	18	7.4	243	100.0
Medium	78	67.8	32	27.8	5	4.3	115	100.0
Expensive	22	88.0	2	8.0	1	4.0	25	100.0
Very expensive	2	66.7	0	0.0	13	3.3	3	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .007 / Cramer's  $V = .144$

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the enabling variable *cost of the transitional nursing organisations*, Table 8.14b shows a strongly significant correlation ( $\chi^2 = .007$ ) and a weak association with Cramer's  $V = .144$ . Table 8.14b also shows that more than four-fifth-third (88.0%,  $n = 22$ ) of the respondents with expensive costs of the transitional nursing organisations is reporting the highest utilisation of the traditional nursing institutions.

In contrast, nearly half (44.8%,  $n = 30$ ) of respondents with no costs of the transitional nursing organisations are reporting the highest utilisation of the transitional nursing organisations, compared to less than one-tenth (7.5%,  $n = 5$ ) of the respondents with similarly no costs of the transitional nursing organisations, reporting the highest utilisation of the modern nursing organisations.

Table 8.14c Distribution of the Enabling Variable of 'Transport Cost of the Modern Nursing Institution' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Transport Cost of the Modern Nursing Institution	N	%	N	%	N	%	N	%
Free of charge	72	55.8	48	37.2	9	7.0	129	100.0
Very cheap	15	44.1	16	40.1	3	8.8	34	100.0
Cheap	29	43.3	32	47.8	6	9.0	67	100.0
Medium	129	65.8	61	31.1	6	3.1	196	100.0
Expensive	97	65.1	40	26.8	12	8.1	149	100.0
Very expensive	9	81.8	1	9.1	1	9.1	11	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .009 / Cramer's  $V = .142$

Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the enabling variable *transport cost of the modern nursing institution*, Table 8.14c shows a strongly significant correlation ( $\chi^2 = .009$ ) and a weak association with Cramer's  $V = .142$ . Table 8.14c also shows that more than four-fifth-third (88.8%,  $n=9$ ) of the respondents indicating expensive costs of the transitional nursing organisations is reporting the highest utilisation of the traditional nursing institutions.

In contrast, nearly half (47.8%,  $n=32$ ) of respondents indicating cheap transport cost of the modern nursing institution is reporting the highest utilisation of the transitional nursing organisations, compared to less than one-tenth (7.8%,  $n=3$ ) of the respondents indicating very cheap transport cost of the modern nursing institution, reporting the highest utilisation of the modern nursing organisations.

Table 8.14d Distribution of the Enabling Variable of 'Health Insurance Ownership' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Health Insurance Ownership								
No	107	69.9	38	25.2	8	5.3	153	100.0
Yes	244	56.4	160	37.0	29	6.7	433	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .049 / Cramer's  $V = .09$

Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the enabling variable *health insurance ownership*, Table 8.14d shows a strongly significant correlation between the vaccination history of the respondents and their differential utilisation of the plural nursing system ( $\chi^2 = .049$ ), and a weak association of the Cramer's  $V = .09$ . Table 8.14d also shows that more than four-fifth (69.9%,  $n=107$ ) of the respondents with no health insurance ownership is reporting the highest utilisation of traditional nursing institutions. In contrast, just more than one-third (37.0%,  $n=160$ ) of respondents with health insurance ownership is reporting the highest utilisation of transitional nursing institutions.

In comparison, less than one-tenth (6.7%,  $n=9$ ) of the respondents with health insurance ownership reporting the highest utilisation of modern nursing organisations.

### Institutional Variables

Table 8.15a Distribution of the Institutional Variable of 'Availability of the Transitional Nursing Organisations' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Availability of the Transitional Nursing Organisations								
None	4	44.4	5	55.6	0	0.0	9	100.0
Chemist	122	57.8	81	38.4	8	3.8	211	100.0
Warung obat ('Stall')	133	72.3	38	20.7	13	7.1	184	100.0
Drug store	1	100.0	0	0.0	0	0.0	1	100.0
Total	260	62.4	124	30.6	21	5.2	405	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .005 / Cramer's  $V = .152$

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the institutional variable *availability of the transitional nursing organisations*, Table 8.15a shows a significant correlation ( $\chi^2 = .005$ ) and moderate association with Cramer's  $V = .152$ . Table 8.15a also shows that nearly three-fourth (72.3%,  $n=133$ ) of the respondents with the availability of *Warung obat* ('Stall') of the transitional nursing organisations are reporting the highest utilisation of the traditional nursing institutions. In addition, more than half (55.6%,  $n=5$ ) of the respondents with no availability of the transitional nursing organisations reporting their highest

utilisation of the transitional nursing organisations. In contrast, less than one-tenth (7.1%, n=13) of the respondents with the availability of *Warung obat* ('Stall') of the transitional nursing organisations is reporting their highest utilisation of the modern nursing organisations.

Table 8.15b Distribution of the Institutional Variable of 'Geographical Distance to Modern Nursing Organisation' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Geographical Distance to Modern Nursing Organisation	N	%	N	%	N	%	N	%
0.1 – 2 km	126	50.8	108	43.5	14	5.6	248	100.0
2.1 – 4 km	126	60.6	70	33.7	12	5.8	208	100.0
4.1 – 6 km	61	77.2	15	19.0	3	3.8	79	100.0
6.1 – 8 km	23	76.7	2	6.7	5	16.7	30	100.0
> 8.1 km	15	71.4	3	14.3	3	14.3	21	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .000 / Cramer's V = .160

Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the institutional variable *geographical distance to modern nursing organisation*, Table 8.15b shows a most strongly significant correlation ( $\chi^2 = .000$ ) and a weak association of Cramer's V = .160. Table 8.15b also shows that more than three-fourth (76.7%, n=233) of the respondents with a geographical distance between 6.1 – 8 km to a modern nursing organisation is reporting the highest utilisation of the traditional nursing institutions, followed by more than half (43.5%, n=108) of the respondents with a geographical distance between 0.1 – 2 km to a modern nursing organisation is reporting the highest utilisation of the transitional nursing organisations.

In contrast, less than one-fifth (16.7%, n=5) of the respondents with a geographical distance between 6.1 – 8 km to a modern nursing organisation is reporting the highest utilisation of the modern nursing organisations is reporting their highest utilisation of the modern nursing organisations.

Table 8.15c Distribution of the Institutional Variable of 'Zonation Location of the Community' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Zonation Location of the Community	N	%	N	%	N	%	N	%
Mountainous	161	74.5	39	18.1	16	7.4	216	100.0
Plains	190	51.4	159	43.0	21	5.7	370	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .000 / Cramer's V = .254

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the institutional variable *zonation location of the community*, Table 8.15c shows a most strongly significant correlation ( $\chi^2 = .000$ ) and a strong association of Cramer's V = .254.

Table 8.15c also shows that nearly three-fourth (74.5%, n=614) of the respondents from a mountainous zonation location of the community is reporting the highest utilisation of the traditional nursing institutions, while nearly half (43.0%, n=159) of the respondents from a plain zonation location of the community is reporting the highest utilisation of the transitional nursing organisations. In comparison, less than one-tenth (7.4%, n=5) of the respondents from a mountainous zonation location of the community is reporting the highest utilisation of the modern nursing organisations.

## Intervening Variables

Table 8.16a Distribution of the Intervening Variable of ‘Government/Public Regulations Influencing Utilisation of Modern Nursing Organisations’ of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Government/Public Regulations Influencing Utilisation of Modern Nursing Organisations								
Electronic campaigns (TV, radio, internet)	4	66.7	0	0.0	2	33.3	6	100.0
Health education/ campaigns from health officers	256	58.6	153	35.0	28	6.4	437	100.0
Other	91	63.6	45	31.5	7	4.9	143	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .035/Cramer's V = .094

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the intervening variable *government/public regulations influencing utilisation of modern nursing organisations*, Table 8.16a shows a strong significant correlation ( $\chi^2 = .035$ ) and a strong association of Cramer's V = .094.

Table 8.16a also shows that two-third (66.7%, n=4) of the respondents with experience of electronic campaigns (TV, radio, internet) influencing the utilisation of modern nursing organisations is reporting the highest utilisation of the traditional nursing institutions. In contrast, more than one-third (35.0%, n=153) of the respondents with experience of health education/ campaigns from health officers influencing the utilisation of modern nursing organisations is reporting the highest utilisation of the transitional nursing organisations. Also, one-third (33.3%, n=2) of the respondents with experience of electronic campaigns influencing the utilisation of modern nursing organisations is reporting the highest utilisation of the modern nursing organisations.

Table 8.16b Distribution of the Intervening Variable of ‘Promotion of Home Nursing by the Government’ of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Promotion of Home Nursing by the Government								
Ministry of Health regulations	6	54.5	5	45.5	0	0.0	11	100.0
BPJS	1	25.0	1	25.0	2	50.0	4	100.0
Other	344	60.2	192	33.6	35	6.1	571	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) = .007/Cramer's V = .110

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the intervening variable *promotion of home nursing by the government*, Table 8.16b shows a strongly significant correlation ( $\chi^2 = .007$ ) and a weak association of Cramer's V = .110. Table 8.16b also shows that nearly three-fifth (60.2%, n=344) of the respondents with experience of promotion by the government of other forms of home nursing is reporting the highest utilisation of the traditional nursing institutions, while nearly half (45.5%, n=5) of the respondents with experience of Ministry of Health regulations is reporting the highest utilisation of the transitional nursing organisations. In comparison, less than one-tenth (6.1%, n=35) of the respondents with experience of promotion by the government of other home nursing promotion is reporting the highest utilisation of the modern nursing organisations.

Table 8.16c Distribution of the Intervening Variable of ‘Modern Nursing Promotion by the Government’ of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Modern Nursing Promotion by the Government								
No	82	70.7	29	25.	5	4.3	116	100.0
Yes	269	57.2	169	36.0	32	6.8	470	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) =.020/Cramer's V =.100

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the intervening variable *modern nursing promotion by the government*, Table 8.16c shows a very strong significant correlation ( $\chi^2 =.020$ ) and a weak association of Cramer's V =.100

Table 8.16c also shows that nearly two-third (70.7%, n=82) of the respondents with no experience of modern nursing promotion by the government is reporting the highest utilisation of the traditional nursing institutions, while more than one-third (36.0%, n=169) of the respondents with experience of modern nursing promotion by the government is reporting the highest utilisation of the transitional nursing organisations.

In comparison, less than one-tenth (6.8%, n=32) of the respondents with experience of modern nursing promotion by the government is reporting the highest utilisation of the modern nursing organisations.

Table 8.16d Distribution of the Intervening Variable of ‘Government/Public Promotion Influencing Utilisation of Modern Nursing Organisations for CVD Prevention’ of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
	N	%	N	%	N	%	N	%
Government/Public Regulations Influencing Utilisation of Modern Nursing Organisations for CVD Prevention								
Ministry of Health regulations	69	68.3	26	25.7	6	5.9	11	100.0
Local government regulations	20	52.6	16	42.1	2	5.3	38	100.0
BPJS	178	54.4	127	38.8	22	6.7	327	100.0
Other	84	70.0	29	24.2	7	5.8	120	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's  $\chi^2$  (Asympt. Sig., 2-sided) =.036/Cramer's V=.119

Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the intervening variable *government/public promotion influencing utilisation of modern nursing organisations for CVD prevention*, Table 8.16d shows a strongly significant correlation ( $\chi^2 =.036$ ) and a weak association of Cramer's V =.119.

Table 8.16d also shows that more than two-third (70.0%, n=84) of the respondents with experience of other *promotions influencing the utilisation of modern nursing organisations for CVD prevention* is reporting the highest utilisation of the traditional nursing institutions, while more than two-fifth (42.1%, n=16) of the respondents with experience of local government/public regulations influencing utilisation of modern nursing organisations for CVD prevention is reporting the highest utilisation of the transitional nursing organisations.

In comparison, less than one-tenth (6.7%, n=22) of the respondents with experience of BPJS influencing utilisation of modern nursing organisations for CVD prevention is reporting the highest utilisation of the modern nursing organisations.

Table 8.16e Distribution of the Intervening Variable of ‘Impact of Government/Public Promotion Influencing Utilisation of Modern Nursing Organisations for CVD Treatment’ of Respondents of the Sample over the Dependent Variables .(N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Impact of Government/Public Promotion Influencing Utilisation of Modern Nursing Organisations for CVD Treatment	N	%	N	%	N	%	N	%
None	85	69.7	31	25.4	6	4.9	122	100.0
Very low impact	10	35.7	17	60.7	1	3.6	30	100.0
Low impact	16	66.7	5	20.8	3	12.5	24	100.0
Average	73	61.3	41	34.5	5	4.2	119	100.0
High impact	114	59.7	63	33.0	14	7.3	191	100.0
Very high impact	53	52.0	41	40.2	8	7.8	102	100.0
Total	350	59.8	198	33.8	37	6.3	585	100.0

Pearson’s  $\chi^2$  (Asympt. Sig., 2-sided) =.023/Cramer’s V=.133

Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the intervening variable *impact of government/public promotion influencing utilisation of modern nursing organisations for CVD treatment*, Table 8.16e shows a strongly significant correlation ( $\chi^2 = .023$ ) and a weak association of Cramer's V =.133.

Table 8.16e also shows that more than two-third (69.7%, n=85) of the respondents with no impact of government/public promotion influencing utilisation of modern nursing organisations for CVD treatment is reporting the highest utilisation of the traditional nursing institutions, while nearly two-third (60.7%, n=17) of the respondents with very low impact of government/public promotion influencing utilisation of modern nursing organisations for CVD treatment is reporting the highest utilisation of the transitional nursing organisations.

In comparison, more than one-tenth (12.5%, n=3) of the respondents with very low impact of government/public promotion influencing utilisation of modern nursing organisations for CVD treatment is reporting the highest utilisation of the modern nursing organisations.

In Sum, the general explanation of the results of the bivariate analysis in terms of the strong significant correlations between respondents with the selected independent socio-demographic, psycho-social, perceived morbidity, enabling, institutional, and intervening variables and the dependent variables of utilisation of the plural nursing system in the research area underscore that the majority of respondents continue to follow their *kearifan kesehatan local* (‘indigenous medical knowledge’) as applied in the *perawatan tradisional* (‘indigenous system of nursing knowledge, beliefs and practices’), and as such expressed in their reported substantial utilisation of the traditional nursing institutions in the Sumedang Regency of West Java.

The bivariate analysis of these variables shows not only an evidence-based preference of local people for the utilisation of indigenous nursing institutions, particularly for nursing of patients with CVD, but also a clear lack of due attention from the national health system for the user-oriented needs of appropriate nursing of people with CVD. The fact that the selected variables, complemented with categorised data of the respondents from the sample are showing even more stronger significant correlations with their utilisation of the traditional nursing institution, implies that these variables are very important for the proposed development of integrated nursing in the Sumedang Regency of East Java. The remarkable findings of the bivariate analysis of selected variables categorised in the different blocks of variables within the multivariate model of transcultural nursing utilisation are

presented in Figure 8.2 in which the statistically significant mutual correlations between variables of the mode are indicated. The independent variables, for which a statistically significant correlation with the dependent variables is calculated, are represented in the respective block of factors under reference of the chi-value. The significant mutual correlations displayed in Figure 8.2 anticipate the complexity of a multivariate analysis of data, in which all variables identified in the model are included, notably irrespective of their significance value revealed within the bivariate analysis.

In the step-wise analysis of the research data, the bivariate analysis provides a basic overview of the significance of the correlations of the independent variables in relation with the dependent variables. In order to further understand the significance of the significant correlations, additional analysis are required in order to assess the overall extension of determinants of people's patterns of the plural nursing system utilisation behaviour.

## 8.2 The Mutual Correlations Analysis

### 8.2.1 Overview of Significant Variables

Based on the bivariate cross-tab analysis among the independent, intervening and dependent variables, the study could indicate the mutual correlations analysis, which shows the significant variables which influence the behavioural patterns of the people in the utilisation of the plural community nursing institutional system in the four sample villages.

Figure 8.2 shows the mutual correlations analysis constructed on the basis of the resulting significant correlations of variables, calculated in the preceding bivariate analysis. The abbreviation of each variable includes the statistical significance measures written in *italics*. Pertaining to the following conclusions:

1. In terms of the socio-demographic variables, there are seven significant variables which have mutual correlations with the intervening variables on their influence in the utilisation of traditional nursing institutions in contrast to transitional and modern nursing organisations. The significant variables are 'household relationship' (*hhrel/.000*), 'gender of the respondents' (*gender/.000*); 'age of respondent' (*age/.000*); 'marital status of respondent' (*marstat/.000*); 'profession of the respondents' (*profession/.000*); 'vaccination history' (*vacc/.000*); and the duration of the illness, expressed in 'length of cvd' (*lencvd/.000*);
2. In terms of the psycho-social variables, there are five significant variables which have mutual correlations with the intervening variables on their influence in the utilisation of traditional nursing institutions in contrast to the transitional and modern nursing organisations. The variables are 'knowledge of traditional nursing institutions' (*knowtrad/.000*); 'knowledge of traditional nursing for prevention of CVD' (*knowcvd/.012*), 'knowledge of transitional nursing institution' (*knowtrans/.036*), 'knowledge of transitional nursing institution for CVD' (*transcvd/.016*), and 'beliefs in traditional nursing institution as a prevention of CVD' (*beltrad/.041*);
3. In terms of the perceived variables, there is only one significant variable which has mutual correlations with the intervening variables on their influence in the utilisation of traditional nursing institutions in contrast to the transitional and modern nursing organisations. The variable is 'perceived general health status' (*perhe/.003*);
4. In terms of the enabling variables, there are four variables that have mutual correlations with the intervening variables on their influence in the utilisation of traditional nursing institutions in contrast to the transitional and modern nursing organisations: 'monthly income of head of household' (*headinc/.035*); 'use of the support of the transitional nursing institution' (*costrans/.007*); 'transport cost to reach modern nursing organisation source' (*transmod/.009*), and 'health insurance ownership' (*helins/.049*).



5. In terms of institutional variables, only one variable has a mutual correlations with the intervening variables on their influence in the utilisation of traditional nursing institutions in contrast to the transitional and modern nursing organisations. The only significant variable is ‘geographical distance to modern nursing institution’ (*modedist/.000*); and finally;
6. In terms of the environmental variables, two variables have mutual correlations with the intervening variables - mentioned below - on their influence in the utilisation of traditional nursing institutions in contrast to the transitional and modern nursing organisations. The variables are ‘environmental location of the nursing institutions’ (*envloc/.000*), and ‘zonation location of the nursing institutions’ (*zonaloc/.000*).
7. The intervening variables in this model indicate the mutual correlations to the independent variables as well as their influence in the utilisation of the traditional nursing institutions, in contrast to the transitional and modern ones. The significant variables are ‘source of government/public regulations influencing the utilisation of modern nursing organisations for CVD’ (*gremod2/.035*), ‘home nursing promotion by the government’ (*gprohom3/.007*), ‘modern nursing institution utilisation promotion by the government’ (*gpromod/.020*), ‘government/public promotion influencing utilisation of modern nursing institution for CVD’ (*gpromod3/.036*), and ‘impact of government/public promotion influencing utilisation of modern nursing institution for CVD’ (*gpromod4/.023*).

In the next Paragraph, the multivariate and multiple regression analyses will be elaborated. The behavioural patterns of the local people of Sumedang in the utilisation of the Plural Nursing System will be explained through a stepwise analysis with a multivariate analysis and multiple regression analysis to explain the influence of independent and intervening variables towards the dependent variables of the utilisation behaviour.

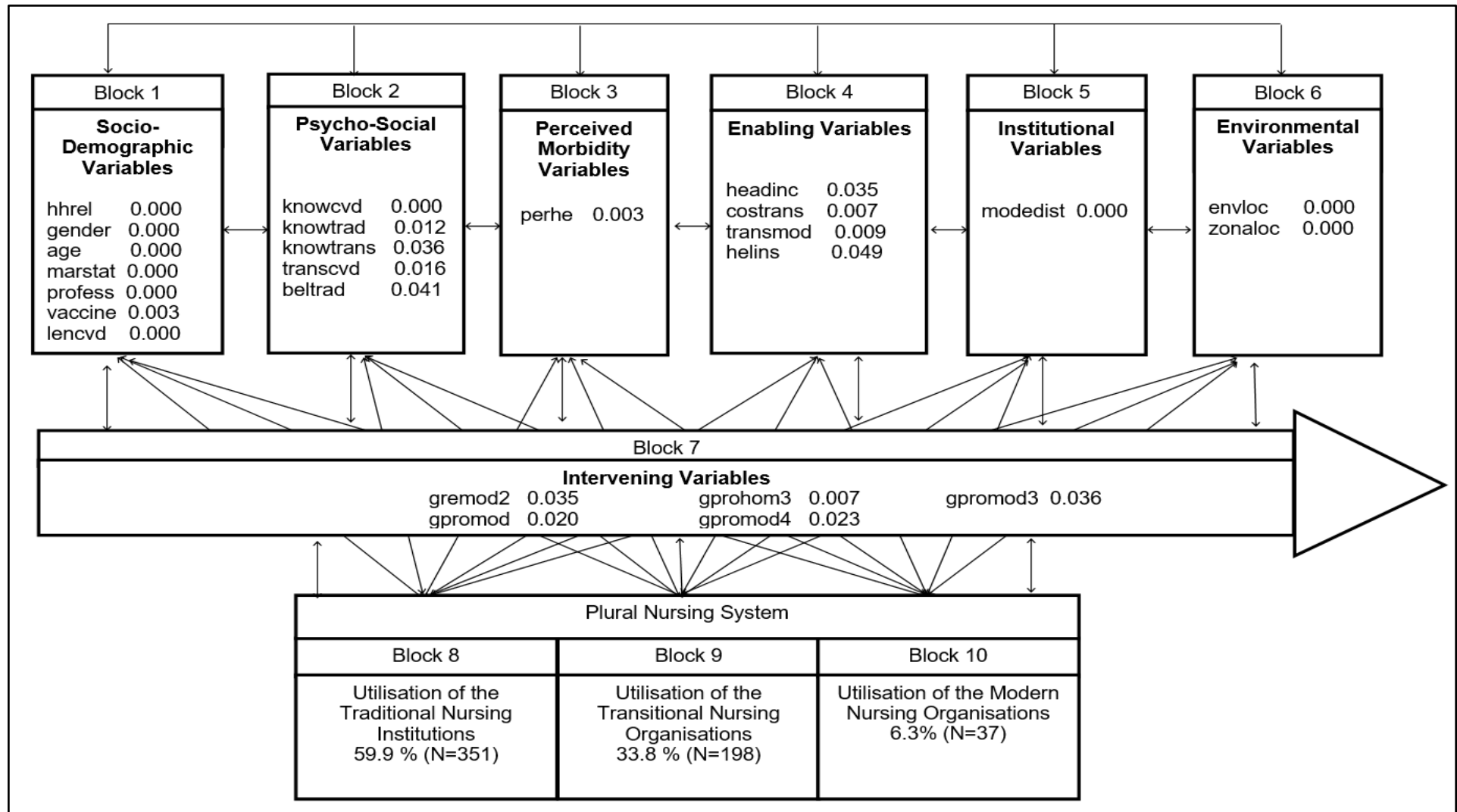


Figure 8.2 Model of the Mutual Correlations Analysis of the Blocks of Variables  
 Note: Variables which are statistically significant are presented in the block with the significant value  
 Source: Adapted from Slikkerveer 2012 for Computations based on the Field Work Survey (2017).

## 8.3 The Multivariate Analysis: OVERALS

### 8.3.1 The Non-Linear Canonical Correlation Analysis (OVERALS)

In addition to the bivariate analysis in the previous section, this study is also conducting a multivariate analysis. The multivariate analyses are examined by implementing optimal scaling: the Non-Linear Generalized Canonical Correlation Analysis, which is known as OVERALS. It has been developed by the Data Theory Scaling System Group (DTSS) of Leiden University in the Netherlands. Similar studies which have used OVERALS have been executed by Slikkerveer (1990, 1995), Agung (2005), Leurs (2010), Djen Amar (2010), Ambaretnani (2012), Aiglsperger (2014); Erwina (2019), De Bekker (2020), Saefullah (2019) and Febriyanti (2021) in the multivariate analysis in various studies in subjects of Ethnoscience and Development.

As regards the quantitative analysis of the data in this study, the analysis implements Categorical Components Analysis with optimal scaling for data reduction when the variable is categorical (nominal and ordinal with only small numbers of values, each of which corresponds to a specific category value/label). The categorical data cannot be normally distributed as they are not continuous data (*cf.* Field 2009; 2013). Categorical Component Analysis is concerned with identifying the underlying variables from the set of variables while maximizing the amount of variance accounted for in those items by the principal components. The analysis fits in as it does not assume linear correlations among the numeric data nor does it require assuming multivariate normal data. In optimal scaling, it is an advantage as the researcher specifies the chosen level of measurement, according to earlier research.

The reduction technique, run in IBM PASW 22.0, mainly in two dimensions with the exception of one variable, requires multiple runs in a block of variables as shown in the analytical model. In this multivariate analysis, the study applies multiple regression and canonical correlation analysis, while at the same time OVERALS is also applied to indicate the relationship of sets of variables of each other. Seven blocks of independent variables, including one block of intervening variables, are used to analyse its influence on three dependent variables in the utilisation behaviour of the Plural Nursing Systems. The seven blocks of independent and intervening variables are the Socio-demographic, Psycho-social, Perceived Morbidity, and Enabling Variables, Institutional Variables, Environmental Variables and Government/Private Influence through policies and promotion. Altogether, the number of significant variables total 25.

Table 8.17 Component Loadings of the Two Sets of Variables with a Total of 25 Variables on Two Dimensions (N=856)

Set	Dimension	
	1	2
1 hhrel <sup>a,b</sup>	-0,836 (1)	-0,002
gender <sup>a,b</sup>	-0,274 (4)	0,112
age <sup>b,c</sup>	0,133	0,132
marstat <sup>a,b</sup>	0,014	0,007
profession <sup>a,b</sup>	-0,194	0,211 (2)
vaccin <sup>a,b</sup>	-0,187	0,042
length <sup>b,c</sup>	0,284 (3)	-0,072
knowcvd <sup>b,c</sup>	-0,082	0,081
knowtrad <sup>b,c</sup>	0,002	0,077
knowtrans <sup>b,c</sup>	-0,038	-0,188 (3)
transcvd <sup>b,c</sup>	-0,009	-0,162 (4)
beltrad <sup>b,c</sup>	-0,093	-0,042
perhe <sup>b,c</sup>	-0,015	-0,152 (5)
headinc <sup>b,c</sup>	0,114	0,007
costrans <sup>b,c</sup>	0,186	-0,068
transmod <sup>b,c</sup>	0,223	-0,110

Table 8.17 (Continued) Component Loadings of the Two Sets of Variables with a Total of 25 Variables on Two Dimensions (N=856)

Set	Dimension	
	1	2
helins <sup>a,b</sup>	0,024	-0,002
modedist <sup>b,c</sup>	0,265 (5)	0,126
envloc <sup>a,b</sup>	0,257	0,139
zonaloc <sup>a,b</sup>	-0,335 (2)	-0,058
gremod2 <sup>a,b</sup>	-0,042	-0,239 (1)
gprohom3 <sup>b,c</sup>	-0,082	0,102
gpromod <sup>a,b</sup>	-0,149	0,049
gpromod3 <sup>a,b</sup>	-0,188	0,019
gpromod4 <sup>b,c</sup>	-0,120	0,047
2 Traditional nursing institution <sup>b,d</sup>	0,882	-0,225
Transitional nursing institution <sup>b,d</sup>	-0,901	-0,187
Modern nursing institution <sup>b,d</sup>	-0,035	0,840

a. Optimal Scaling Level: Single Nominal

b. Projections of the Single Quantified Variables in the Object Space

c. Optimal Scaling Level: Ordinal

d. Optimal Scaling Level: Numerical

Based on Table 8.17, there are five leading independent variables in Dimensions 1 and 2, which explain the strongest correlation to people's behaviour in the utilisation of the plural nursing systems, among traditional institutions, transitional and modern nursing organisations.

As regards the analysis, the 'household relationship' ('*hhrel*') variable of the environmental variables in Dimension 1 is the strongest correlation to 'People's behaviour in the utilisation of the Plural Nursing System' (correlation score of -.836).

Table 8.18 Distribution of the Strongest Correlated Variables to People's Behaviour in the Utilisation of the Plural Nursing System in Sumedang (N= 586)

Dimension 1	Dimension 2
<i>hhrel</i>	<i>gremod2</i>
<i>zonaloc</i>	<i>profession</i>
<i>lencvd</i>	<i>knowtrans</i>
<i>gender</i>	<i>transcvd</i>
<i>modedist</i>	<i>headinc</i>

Source: Computations based on the Field Work Survey (2017).

### 8.3.2 Projection of Variables and Objects in Canonical Space

The component loadings of all variables are presented graphically in the centroid plot of Figure 8.3. The distance from the origin to each variable point approximates the importance of each variable. Both the relationship and direction scores among variables can be explored as they appear in the plot.

When there are no missing data, the component loadings are equivalent to Pearson's correlation between the quantified variables and the object scores. The three dependent variables are plotted with three straight lines from the center of the graph to distinguish them from the independent and the intervening variables. The line also explains the closest influences of each of the independent and intervening variables to the related dependent variables.

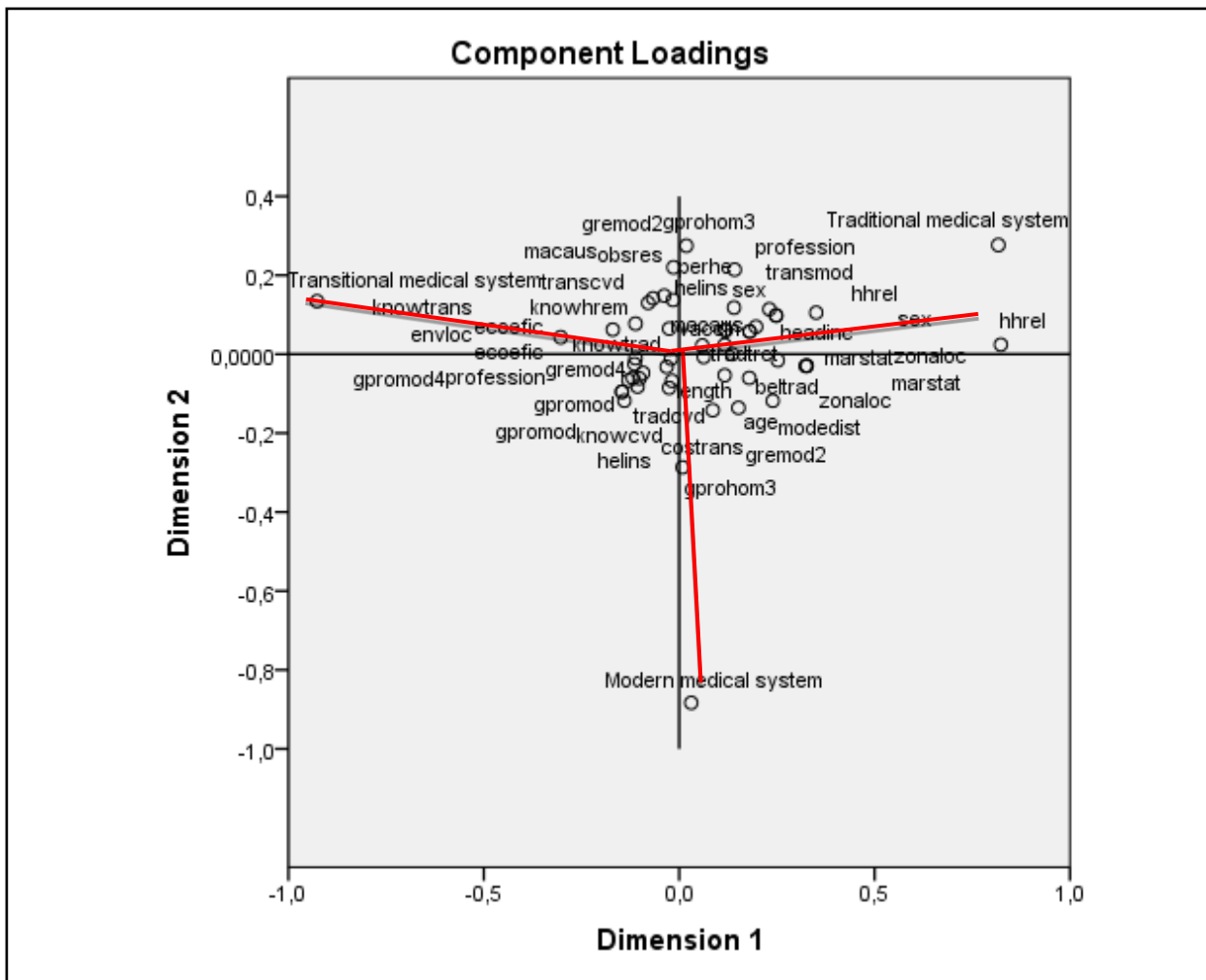


Figure 8.3 Plot of the Component Loading Analysis (OVERALS) for the Utilisation of the Plural Nursing System in Sumedang.  
 Source: Computations based on Field Work Survey (2017).

### 8.4 Multiple Regression Analysis of Variables

#### 8.4.1 Analysis of the Model and Interpretation of the Findings

The next step after examining the correlations between one variable and another in the bivariate analyses and the interaction among variables in the mutual relation analysis in the next section is the stepwise analysis which is further undertaken to compare the various blocks of variables in the model with each other in order to determine the relative strength of interaction, known as the multiple regression analysis. The multivariate analysis can be extended to develop an explanatory, analytical model of utilisation behaviour of the plural nursing systems. It measures the correlation between the different blocks of variables identified in the model. While bivariate and multivariate analyses have so far illustrated the correlations between different variables in the model, this section seeks to calculate the maximum correlation between the blocks of the variables (cf. Agung 2005; Ibui 2007; Leurs 2010, Djen Amar 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014; Erwina 2019; Saefullah 2019; De Bekker 2020; and Febriyanti 2021). The correlation between the blocks of variables is measured by means of multiple regression analysis estimating the significance of the overall model by comparing the observed values to the predicted ones for each dimension, represented by a multiple correlation coefficient (r). The following ten blocks of variables were specified for multiple regression analysis:

### *Blocks of Independent and Intervening Variables*

1. In the blocks of socio-demographic variables, the variables are ‘Household Relationship’ (*hhrel*), ‘Gender of the Respondents’ (*gender*), ‘Age of respondent’ (*age*), ‘Profession of the Respondents’ (*profession*), ‘Vaccination history’ (*vacc/.000*), and ‘Length of CVD’ (*lencvd*);
2. In the blocks of psycho-social variables, the variables are ‘knowledge of traditional nursing institutions’ (*knowtrad*), ‘knowledge of traditional nursing institutions for prevention of CVD’ (*knowcvd*), ‘knowledge of transitional nursing institutions’ (*knowtrans*), ‘knowledge of transitional nursing institutions for CVD’ (*transcvd*), and ‘beliefs in traditional nursing institution as a prevention of CVD’ (*beltrad*);
3. In the blocks of perceived morbidity variables, the only variable is ‘perceived general health status’ (*perhe*);
4. In the blocks of enabling variables, the variables are ‘monthly income of head of household’ (*headinc*), ‘cost to use the support of the transitional nursing institution’ (*costrans*), ‘transport cost to reach modern nursing organisations’ (*transmod*), and ‘health insurance ownership’ (*helins*);
5. In the blocks of institutional variables, the only significant variable is ‘the geographical distance to modern medical institution’ (*modedist*);
6. In the blocks of environmental variables, the two variables are ‘environmental locations of the nursing institutions’ (*envloc*), and ‘zonation locations of the nursing institutions’ (*zonaloc*);
7. In the blocks of the intervening variables, the variables are ‘source of government/public regulations influencing the utilisation of modern nursing organisations for CVD’ (*gremod2*), ‘home nursing promotion by the government’ (*gprohom3*), ‘modern nursing institution utilisation promotion by the government’ (*gpromod*), ‘government/public promotion influencing utilisation of modern nursing institutions for CVD’ (*gpromod3*), and ‘impact of government/public promotion influencing utilisation of modern nursing institutions for CVD’ (*gpromod4*).

### *Blocks of the Dependent Variables*

8. The block of utilisation of the Traditional Nursing Institutions (*Trad*);
9. The block of utilisation of the Transitional Nursing Organisations (*Trans*);
10. The block of utilisation of the Modern Nursing Organisations (*Mod*).

In order to calculate all the possible correlations between the blocks of variables and to distinguish the associations, multiple regression analysis is applied. It uses the eigenvalue (Ed) of each correlation, which is derived from the individual OVERALS analyses of all possible combinations of the blocks of variables. OVERALS provides an eigenvalue for each dimension (Ed) of the calculation, and forms the basis for the subsequent calculations of the multiple correlation coefficients (r) for each dimension. The formula is applied to the calculation of the multiple correlation coefficients using the ‘eigenvalue’ with the following formula of ‘ $r = 2 \times Ed - 1$ ’ (cf. Van der Burg 1988; Agung 2005; Ibui 2007; Leurs 2010; Djen Amar 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014, Erwina 2019, Saefullah 2019; De Bekker 2020 and Febriyanti 2021).

Table 8.19 depicts a list of all multiple correlation coefficients, which have been calculated separately for all the possible combinations of blocks of variables for each dimension. A stepwise regression analysis by the use of the ‘eigenvalue’ as the multivariate measure of interactions among all the variables concerned is conducted with the assistance of the statistical software of IBM PASW version 22 as the result of the Dimension-Reduction Optimal Scaling statistical technique. The optimal scaling of each of the two blocks of variables is scaled in different levels and an optimally quantified component loading number with dimensions. The first column of Table 8.17 to the left highlights the numbers of the respective blocks of variables, to which an OVERALS analysis is applied. Hereafter, the second column indicates the dimension of the solution, for which the multiple correlation coefficient is calculated. The formula which is used to calculate the multiple correlation coefficient is presented in the third column from the left and is reconstructed for each correlation

using the corresponding eigenvalues. As suggested by Cohen (1988; 1992), the values of  $\rho$  are presented for each dimension in the last column to the right, whereby the value of  $r = .10$  reveals a weak correlation effect, the value of  $r = .30$  reveals a moderate correlation effect and the value of  $r = .50$  reveals a strong correlation effect. Any correlation coefficients between those values will be interpreted in between the categories. For instance, if the correlation coefficient is  $.40$ , the correlation effect can be interpreted as moderate to strong, while the correlation coefficient of  $.25$  can be interpreted as a weak to moderate correlation effect. In more detail, Calkins (2005) categorised the coefficient correlations as very highly correlated for  $r$  between  $0.9$  to  $1.0$ , highly correlated for  $r$  between  $0.7$  to  $0.9$ , moderately correlated for  $r$  between  $0.5$  to  $0.7$ , weakly correlated for  $r$  between  $0.3$  to  $0.5$  and little or hardly correlated for  $r$  less than  $0.3$  to  $0$  (*cf.* Calkins 2005; Field 2013, Aiglsperger 2014, Erwina 2019, and Saefullah 2019; De Bekker 2020; and Febriyanti 2021).

In general, the eigenvalue reveals that for each dimension, the extent of the correlation between two blocks of variables can be explained by the model as opposed to having occurred by chance. In this respect, the sum of the eigenvalues on both dimensions of each correlation refers to the total ‘fit’ of the model to the respective variables, whereby a perfect ‘fit’ equals the number of dimensions chosen (*cf.* Van der Burg 1988; Field 2013; Aiglsperger 2014). Table 8.17 reveals where there are different correlation effects between the independent, intervening and the dependent variables.

Table 8.19 List of Multiple Correlation Coefficients ( $\rho$ ) calculated by means of a Multiple Regression Analysis of Ten Blocks of Factors on Two Dimensions (N=856)

Block	↔	Block	Dimension	Calculation ( $\rho d = 2 \times Ed - 1$ )	Multiple Correlation Coefficients ( $\rho$ )
1	↔	2	1	$2 \times 0.813 - 1 =$	0.626
			2	$2 \times 0.770 - 1 =$	0.540
1	↔	3	1	$2 \times 0.686 - 1 =$	0.372
		2		$2 \times 0.682 - 1 =$	0.364
1	↔	4	1	$2 \times 0.738 - 1 =$	0.476
		2		$2 \times 0.673 - 1 =$	0.346
1	↔	5	1	$2 \times 0.734 - 1 =$	0.468
1	↔	6	1	$2 \times 0.764 - 1 =$	0.528
		2		$2 \times 0.695 - 1 =$	0.390
1	↔	7	1	$2 \times 1.000 - 1 =$	1.000
			2	$2 \times 1.000 - 1 =$	1.000
1	↔	8	1	$2 \times 0.806 - 1 =$	0.612
1	↔	9	1	$2 \times 0.812 - 1 =$	0.624
1	↔	10	1	$2 \times 0.606 - 1 =$	0.212
2	↔	3	1	$2 \times 0.762 - 1 =$	0.524
			2	$2 \times 0.725 - 1 =$	0.450
2	↔	4	1	$2 \times 1.000 - 1 =$	1.000
			2	$2 \times 0.836 - 1 =$	0.672
2	↔	5	1	$2 \times 0.750 - 1 =$	0.500
2	↔	6	1	$2 \times 0.925 - 1 =$	0.850
			2	$2 \times 0.758 - 1 =$	0.516
2	↔	7	1	$2 \times 0.907 - 1 =$	0.814
			2	$2 \times 0.822 - 1 =$	0.644
2	↔	8	1	$2 \times 0.626 - 1 =$	0.252
2	↔	9	1	$2 \times 0.627 - 1 =$	0.254
2	↔	10	1	$2 \times 0.612 - 1 =$	0.224
3	↔	4	1	$2 \times 0.726 - 1 =$	0.452
			2	$2 \times 0.647 - 1 =$	0.294
3	↔	5	1	$2 \times 0.606 - 1 =$	0.212
3	↔	6	1	$2 \times 0.696 - 1 =$	0.392
			2	$2 \times 0.622 - 1 =$	0.244
3	↔	7	1	$2 \times 0.689 - 1 =$	0.378
			2	$2 \times 0.687 - 1 =$	0.374

Table 8.19 (Continued) List of Multiple Correlation Coefficients ( $\rho$ ) calculated by means of a Multiple Regression Analysis of Ten Blocks of Factors on Two Dimensions (N=856)

Block	↔	Block	Dimension	Calculation ( $\rho_d = 2 \times Ed - 1$ )	Multiple Correlation Coefficients ( $\rho$ )
3	↔	8	1	$2 \times 0.598 - 1 =$	0.196
3	↔	9	1	$2 \times 0.598 - 1 =$	0.196
3	↔	10	1	$2 \times 0.576 - 1 =$	0.152
4	↔	5	1	$2 \times 0.783 - 1 =$	0.566
4	↔	6	1	$2 \times 0.790 - 1 =$	0.580
			2	$2 \times 0.724 - 1 =$	0.448
4	↔	7	1	$2 \times 0.886 - 1 =$	0.722
			2	$2 \times 0.822 - 1 =$	0.644
4	↔	8	1	$2 \times 0.640 - 1 =$	0.280
4	↔	9	1	$2 \times 0.635 - 1 =$	0.270
4	↔	10	1	$2 \times 0.580 - 1 =$	0.160
5	↔	6	1	$2 \times 0.823 - 1 =$	0.646
5	↔	7	1	$2 \times 0.713 - 1 =$	0.426
5	↔	8	1	$2 \times 0.610 - 1 =$	0.220
5	↔	9	1	$2 \times 0.619 - 1 =$	0.238
5	↔	10	1	$2 \times 0.498 - 1 =$	0.004
6	↔	7	1	$2 \times 0.782 - 1 =$	0.564
			2	$2 \times 0.667 - 1 =$	0.334
6	↔	8	1	$2 \times 0.632 - 1 =$	0.264
6	↔	9	1	$2 \times 0.646 - 1 =$	0.292
6	↔	10	1	$2 \times 0.541 - 1 =$	0.082
7	↔	8	1	$2 \times 0.611 - 1 =$	0.222
7	↔	9	1	$2 \times 0.608 - 1 =$	0.216
7	↔	10	1	$2 \times 0.607 - 1 =$	0.214

Source: Computations based on Field Work Survey (2017).

On the whole, the results of the multiple regression analysis show that the block of the perceived morbidity factors and the block of the predisposing socio-demographic factors correlate strongly with all blocks of independent factors and moderately with all blocks of dependent factors. Furthermore, the block of the intervening factors correlates rather strongly with all blocks of independent factors. Likewise, the block of the predisposing psycho-social factors correlates strongly with the blocks of independent factors. On the basis of the results gained from a multiple regression analysis, Figure 8.4 presents the final analytical model of plural nursing system utilisation behaviour.

The groups of variables, which have been identified as determinants of patterns of behaviour, are shown in the respective block of factors, and the correlations ( $r$ ) between the different blocks of factors, which have been identified during the multiple regression analysis, are illustrated accordingly. In this way, the correlations displayed in the model highlight the validity of the multivariate model, which is applied to the present data, and hereby produces the final, explanatory model of plural nursing system utilisation behaviour for the sample population of Sumedang



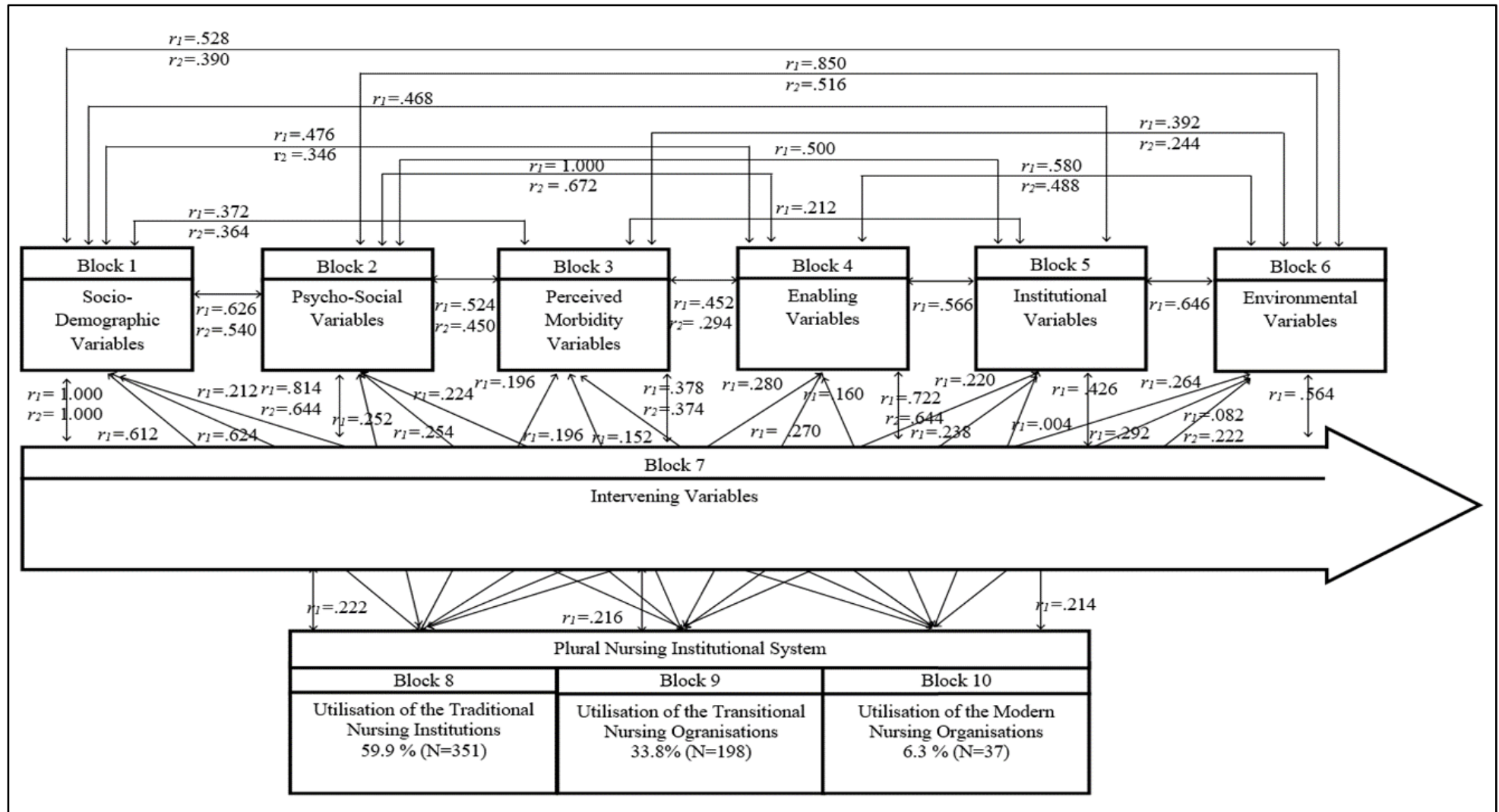


Figure 8.4 The Final Model of the Utilisation Behaviour of Plural Nursing Systems indicating the Strength of the Correlations between the Blocks of Variables, based on the Multiple Regression Analysis.

Note: The indicated figures represent 'r' = the correlation values between the variables.

Source: Computations based on Field Work Survey (2017).