

## **POISONING OBSERVATION AND ASSESSMENT**

**By**

Prof. Dr. Naveed Shibli

Head Department of Psychology

Riphah International University Faisalabad Pakistan

[thedailyeasyenglish@yahoo.com](mailto:thedailyeasyenglish@yahoo.com)

**AZRA PARVEEN**

Clinical Psychologist

[aizyas100@gmail.com](mailto:aizyas100@gmail.com)

03227702182

**SUNDAS RANA**

Clinical Psychologist

[sundarana667@gmail.com](mailto:sundarana667@gmail.com)

03427865436

### **Abstract**

Records of 360 poisoning patients were evolved with observation by trained experts for 6 months on a structured taxonomy sheet (STS) on first entry to a selected poisoning ward. Observations made were about the patients' appearance, facial expressions, vocal signs, social interaction and other observable signs. It was assumed that (STS) could help to distinguish between self, accidental and pretended poisoning behaviors as a quick measure as compared with existing hospital emergency diagnosis procedures. (STS) records were compared with emergency diagnosis. Comparison revealed (STS) capacity to report otherness in three poisoning types with workable similarity. Importance of observational methods emerged in high emergency for

diagnosis/ assessment that could be utilized in areas having less advanced facilities for diagnosis. Methodology suitability emerged as objective diagnosis/ assessment possibility in other kinds of emergency situations in less developed areas. More cross cultural comparison would highlight utility in developing cultures?

**Key Word:** Poisoning, Observation, Assessment

### **Introduction**

Observing patients for assessment is a known technique (Cooke, Higgins & Kidd, 2003) and valid practice (Baglio, Baxter, Guinn, Thompson, Shaffer & Frye, 2004). Observational assessment (Kogan, Conforti, Bernabeo, Iobst & Holmboe, 2011) is to assess behavior by observing (Horgas, Elliott & Marsiske, 2009). Posture observations found useful in behavior assessment (Juhl-Kristensen, Hansson, Fallentin, Andersen & Ekdahl, 2001) however, head posture assessment showed little validity (Silva, Punt & Johnson, 2010) but behavior studies by video recording provided useful clues about behavioral assessment (Hansen, Lambert & Faber, 2012). At present various behavioral assessment methods (Briesch, Chafouleas & Riley-Tillman, 2010) like observation assessment scales (Van Herk, Van Dijk, Baar, Tibboel & De Wit, 2007) are available, a few include, Critical-Care Pain Observation Tool (CPOT) (Gélinas & Johnston, 2007), Disruptive Behavior Diagnostic Observation Schedule (DB-DOS) (Wakschlag, Hill, Carter, Danis, Egger, Keenan, ... & Briggs-Gowan, 2008), Standardized Direct Observation Assessment Tool (Shayne, Gallahue, Rinnert, Anderson, Hern & Katz, 2006) and NOSGER (Spiegel, Brunner, Ermini-Fünfschilling, Monsch, Notter, Puxty & Tremmel, 1991). Observation method has successfully been used for multipurpose assessments like clinical skill assessment (Kogan, Holmboe & Hauer, 2009) and review of couples' observations for clinical value (Heyman, 2001). Observational assessment taxonomy is possible (Leat & Nichols, 2000), it add into the value of

therapist or physician those came across situations to assess patients with observational assessment and itproved useful (Pelgrim, Kramer, Mokkink, Van den Elsen, Grol& Van der Vleuten, 2011).

Anything that can harm life by inhaling, intake, injecting, and ingesting and absorbing can be a kind of poisoning; various substances could cause toxicity (Lynn and Christopher, 2016). Different poisoning situations exist across the cultures (Wananukul, Sriapha, Tongpoo, Sadabthammarak, Wongvisawakorn & Kaojarern, 2007) and it is an important health problem (Mutlu, Cansu, Karakas, Kalyoncu & Erduran, 2010).Poisoning comprehensive definition is available (Belson, Schier, Patel& Centers for Disease Control and Prevention (2005). Poisoning is usually acute in nature (Devendranath; Mohammad,;; Mohammad; Mainnudin; Nur; Ariful,2013). It causes frequent deaths (Meel 2011: Ala, Vahdati, Moosavi&Sadeghi, 2011). Household products identified as the main cause of poisoning in urban areas of India (Patil, Peddawad, Verma& Gandhi, 2014). In 2011 approximately 205000 patients treated for acute poisoning in Germany, the causes reported for these cases were medical drugs, chemicals, plants, foods, or cosmetics (Müller &Desel, 2013).

Some of poisoning substances those reported as causing poisoning in various studies include organophosphate compounds, dichlorvos, diazinon , parathion-methyl. (Yurumez, Durukan, Yavuz, Ikizceli, Avsarogullari, Ozkan,...&Ozdemir, 2007), antidepressant drugs (24.37%), sedative-hypnotics (19%), tricyclic antidepressants (TCA) (14.7%) , cardiovascular drugs (11.4%) (Jalali, Savari, Dehdardargahi & Azarpanah, 2012), agrochemical pesticides (49%), drugs (17%), alcohols (13%) (Singh &Unnikrishnan, 2006), anxiolytic/hypnotic drugs (lorazepam), acetaminophen (Lin, Liu, Liu, Chang, Chou & Wu, 2011), DSP, benzodiazepines (36.6%), paracetamol (22.2%), and antipsychotics (12.1%) (Cheri, Ramesh, Bhakta& Chris, 2012),

sedative-hypnotics, opioids, pesticides organophosphates OPs (Shadnia, Esmaily, Sasanian, Pajoumand, Hassanian-Moghaddam&Abdollahi, 2007), alcohol (54.55%), medication (25.95%), pesticide (5.65%), drug (4.88%) (Chen, Wen, Wang, Lin & Lin, 2010), pharmaceuticals (63.1%), alcohol and surrogates (49.3%), and corrosives (21.8%)(Ostapenko, Matveev, Gassimova&Khonelidze, 2001).

Poisoning is of various types (Trestrail 2000) and each type has its own characteristics and manifestations (Trestrail, John 2007). Risk assessment in poisoning situations is an important aspect related with intervention, the more prompt and accurate the intervention is the more safety could be exercised in an outcome (Paumgarten, Francisco 1993). The poisoning can be accidental or intentional (Chibwana, Mhango&Molyneux 2001). A study reported that (79%) poisoning cases were of intentional poisoning (Shadnia, Esmaily, Sasanian, Pajoumand, Hassanian-Moghaddam&Abdollahi 2007). People use various modes for poisoning like by ingestion (77.8%), given by others (16%), suicide attempts (6.2%)(Assar, Hatami, Lak, Pipelzadeh&Joorabian, 2009). According to the figures mentioned in another study the causes of poisoning were suicide attempts (35.4%), accidents (28.4%), ignorance (26.8%) and occupational (8.6%) (Chirasirisap, Ussanawarong, Tassaneeyakul, Reungsritrakool, Prasitwatanaseree, Sripanyawit,, ... &Patitas, 1992). In another work poisoning for attempted suicide was reported as (92%) and due to drug intoxication (90%) (Kara, Bayir, Degirmenci, Kayis, Akinci, Ak,...&Azap 2014). Another study found that the most (72%) poisonings were intentional and only (27%) were unintentional (Sahin, Carman &Dinleyici, 2011). Belson, Schier, Patel & Centers for Disease Control and Prevention (2005) while discussing causes of poisoning reported attempted (35.4%), accidental (28.4%), by ignorance (26.8%) and due to occupation (8.6%). Some studies are available about poisoning in animals (Xavier &Kogika, 2002).

Frequently observed symptoms of poisoning include nausea , vomiting , burns on the lips, blister or rashes on the skin, around the mouth , ulcers, low blood pressure, hyper ventilation, burning, palpitation, breathlessness, hypothermia , rapid heart beat, restlessness , palpitations , breathing problems , irritation in trachea or larynx or esophagus.

Prediction of suicide risk is difficult in clinical practice (Carter, Reith, Whyte & McPHERSON, 2005), however it was found that suicide attempters' personality scores less resemble with other populations (Ghanem, Gamaluddin, Mansour, Samiee', Shaker & El Rafei, 2013) but, association between personality traits and self-poisoning have been reported (Ardani, Naghibzadeh, Hosseini, Asadpour & Khabazianzadeh, 2015). Self-poisoning is an overdose of any substance or chemical taken for self-harm or for other reasons (Rasimas, Smolicic, & Sinclair, 2017). Bjornaas, Teige, Hovda, Ekeberg, Heyerdahl & Jacobsen (2010) have discussed some specific 'patterns' among the poisoning cases. Coklo, Stemberga, Cuculic, Sosa & Bosnar, (2009) also referred some 'patterns' in various kinds of poisoning, moreover, Coklo, Stemberga, Cuculić, & Šoša, & Bosnar, (2009a) discussed a hypothetical relationship between kind of poisoning and modes of committing suicide.

Ala, Vahdati, Moosavi & Sadeghi (2011) studied the role of demography regarding poisoning. It was found that medical doctors use BZD for poisoning , employed used opioids and alcohol for poisoning as compared with unemployed, moreover males commit suicide with opioids and alcohol as compared with female those use other means. The researchers also provided useful information about age, gender, occupation and level of education. It was also found that preventable accidental poisoning still play a significant role in child morbidity (Sahin, Carman

&Dinleyici, 2011). Moreover the age groups affected by poisoning fall between the age group of 11-30 years of age (Chirasirisap, Ussanawarong, Tassaneeyakul, Reungsritrakool, Prasitwatanaseree, Sripanyawit,... &Patitas, 1992).

The importance of correct and prompt diagnosis in ailment management is known (Lee, Goren, Zou, Odell, Russell, Araiza, &Luo 2016). Objectivity in psychological assessment is historical (Gillham, 2001) and has contributed positively towards treatment efficiency (John 2003).A study revealed that the more objective the diagnosis would be the more feasible it would be to practice psychiatry (Pies, 2007).Therefore, objectivity is a known psychological preference for assessment (Hart & Goldstein1986;Groth-Marnat 2009; Anastasi 1954) and psychiatry (Pies, 2007). Moreover advancement in clinical psychology is a continuous need (Valle &Klimo, 2014).Furthermore,field of assessmentis improving day by day (Greene2011).In that context the shift of attention towards the healthcare provider and clients ‘interaction’ for better health outcomes (von Thiele 2016) is now a focused area.Hull (1937) rated observed facts about adaptive behavior important for behavior assessment. Anobservational study for poisoning cases for demographic analysis (Thapa, Lama, Karki&Khadka, 2008) found it useful for assessment. The present study therefore was planned to explore that is it possible with a systematic objective observation to assess, label and diagnose different type of poisoning cases during initial interaction for prompt and improved intervention that may be useful for the areas where advanced medical facilities lack?

### **Sample and Description**

All the poisoning cases those reported to the poisoning ward of a selected government hospital for admissions from January , 2017 to June , 2017 were included in the present study as sample, total number of participants was 360 those included 197males (54.7%) 162 females (45%) and 01 (0.3%) she male. The age range of respondents was starting from 04 years and was less than 90 years of age. In age group 1 to 15 years of age the number of patients were 16.In the age group of 16 to 30 the number of patients were 260, that was the highest percentage 73%.In age group 31to 45 years of age the number of patients were 57. The patients between age group of 46 to 60 were 21 and in age group 61 to 75 were only 1, whereas, in age group 76 to 90 the number of patients were 2. Among these 172(47.8%) participants were single 180 (50%) were married and 02 (0.6%) were divorced whereas 06 (1.7) were unknown with improper history. A huge number of patients were illiterate 107 (29.7%), 51 (14.1%) were under metric, 73 (20.3%) were matriculates and intermediate. Only 30 (8.3%) were graduates whereas only 06 (1.7%) were highly qualified. 13(3.6%) cases were having no history of education. A large number of participants were unemployed 144 out of 360, 100 out of 360 were students , 102 were employed , 01 was handicapped and 13 were with no history. Most of cases were referred by parents and a few by others. Large number of cases 161 out of 360 waited formal discharge from the ward by their doctors but about 70 cases left without informing and 89 shifted to other wards relating to their complications. 40 cases expired.

### **Method and Procedure**

The 6 months unobtrusive study was conducted to make possible descriptive and narrative pictures of self, accidental and pretended poisoning behaviors. The running records of all poisoning patients' behaviors those admitted in the selected ward were recorded on a Structured Taxonomy Sheet (STS) (Appendices- A) by expert observers for six months. (STS) recorded observations later were compared with initial provisional medical diagnosis of the patients in the emergency and after it with final medical diagnosis. It was assumed that (STS) records could indicate differences between poisoning type behaviors close to medical diagnosis now in practice as a quick diagnostic measure for quick intervention and subsequent pre-cautionary measures? The assumption was based on the fact that for intrinsic motives/reasons the difference due to poisoning category could be observable or could occur in overt behaviors of the poisoning patients? The study was conducted in three phases. In the first phase (STS) was developed in which the possible "poisonous behaviors" in focused categories were described. Expert opinion was also sought during development. In the second phase research assistants were hired for 24 hours duties on the ward counters in the selected poisoning ward. All the three research assistants were familiarized with the nature of study and were apprised about the handling and filling of (STS). Demos and practicing sessions were conducted to fully equip the assistants to meet the requirements of the job. After confirmation that the hired persons had achieved the requisite skills the third phase of study was started in which research assistants were assigned to complete (STS) for six months in the ward as trained.

Riphah Research Ethics Committee approved the study. For verbal informed consent, following instructions were delivered to the research assistants before the conduct. "Watch each admission in the ward on first entrance. Fill in (STS) columns with complete details of first exposure. Do not leave any column blank and in case some other behavior/s takes place that were not

mentioned in (STS) than record it/these as a separate note. After recording the response when you (researcher) found that the patient is settled than approach the patient. If patient is not in senses approach caregiver of the patient for the permission to retain the (STS) recorded response for research purpose. Show the recorded response to the patient or caregiver. Get the permission for inclusion, if patient or caregiver accord approval then include (STS) in the records otherwise delete and count the mentioned number in the study as deleted. During the entire study the data collectors followed the instructions in letter and spirit and a verbal informed consent for each case was acquired.

A few glimpses of details filled in the (STS) were.

- Mode of entrance in poisoning unit as: walking, walking with help, wheel chair, use stature and a few other details.
- Appearance including height, weight, any peculiar feature, hair, dress and a few more.
- Facial Expressions including color of the face, sweating, oral secretions and some more.
- Vocal signs including crying, weeping, scolding, cursing, mute and other details.
- Social interaction and mode details.
- Other signs like breathing, eye movement, and heart rate and a few others.

After the completion of third phase the data gathered by experts was compared with provisional medical diagnosis and final medical diagnosis records of all the cases to assess the comparability of (STS) with already in practice diagnosis methods.

## Results

Among total 360 studied poisoning patients 35, 9.7% were of pretended poisoning, 236, 65.6% were self-poisoning and 89, 24.7% were accidental poisoning. The patterns on (STS) were found closely similar to final medical diagnosis as compared with provisional medical diagnosis. The occurrence of particular behaviors in particular poisoning category (Figure-A)/, (Table-A) were visible and sufficient to support 'patterns' for particular category. The assessment of different types of poisoning cases possibility for intervention based on systematic objective observation (STS) supported.

## Conclusion/ Discussion

Diagnosing patterns of three types of poisoning behaviors pretended, self and accidental by systematic objective observation with (STS) method is possible. For cross cultural applications fresh studies catering for various cultural needs are recommended to test (STS) method utility for quick poisoning type diagnosis. (STS) however application even in similar cultural context may not be practiced without caution and required medical assistance. The study successfully highlights the importance of systematic observation in clinical assessment. Importance of observational methods emerged in high emergency cases for diagnosis/ assessment. It could be utilized in the areas where less advanced diagnostic facilities necessary for modern diagnosis are available. It is easy, could be used without much expertise and even by a nonprofessional. The proposed method in the study could be utilized in other emergencies situations if developed in similar way, the study thereby, brought in a possibility for objective evaluation/ assessment/diagnosis in medical situations in the developing world to cater for less modern medical facilities available there.

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## Appendices- A

### **Structured Taxonomy Chart (STS)**

Form to record possible self, accidental and pretended, poisoning taxonomy in poisoning unit

**(To be filled by the researcher as he/she observes on the first entrance and exposure of the admitted patient)**

#### **Personals and Official details**

Age/ Sex: Hospital no: Marital status: Qualification: Occupation:

Referred by: Address: Date of Admission: Date of Disease, Death, etc

Encircle the appropriate on the first exposure entrance of the patient in the ward

#### **1- Mode of entrance in the ward:**

a- Was walking b- Walking with support c- On wheelchair d- On stature e- Resisting to the attendant to be admitted in hospital

**2- First contact with the ward:**

a- Looked toward attendant b- Looked toward Nurse/Doctor c- Was Semi conscious d- Unconscious e- Didn't make any response

**3- Nurse Patient Interaction Found:**

a- Realistic b- Confused c- Convincing d- Social e- Pretending

**4- Appearance:**

a- Good looking b- Informal dressing c- Reflecting a dirty look d- Was half naked  
e- Completely naked

**5- Hair style:**

a- Stylish b- Partially set c- Unusual d- Dirty with dust e- Dirty with secretion

**6- Vomiting and oral secretions:**

a- Vomiting b- Nausea c- Watery fluid d- Thick oral secretion e- Bloody secretion from mouth and nose

**7- Seeking help:**

a- Crying b-Weeping c- Noise excessively d- Calling names e- Laughing

**8-Observable behavior:**

a- Extremely fearful b- Trembling c- Death feelings d- Was sticking to the attendant

e- Cool and calm

**9- In case of Female:**

a- Makeup exceptional b- Usual healthy look c- Unusual d- No makeup e- Show unhealthy

**10- Unique symptoms:**

<b>Breathing</b>	a-Normal	b-Rapid	c-Slow deep
<b>Tongue</b>	a-Normal	b-Dry	c-Bite or any ulcer
<b>Nails</b>	a-Normal	b-Blue	c-Used nail paint
<b>Eyes</b>	a-Normal	b-Pinch forcibly	c- Pupil dilated

**Remarks:**

**Diagnosis:**

**Type of poison:** Note: This column shall be filled when the diagnosis shall finally be finalized

(Please mark A--- for Self Poisoning, B---- for accidental Poisoning and C--- for pretended, after the final diagnostic findings are finalized)

**Table-A**

**POISONING OBSERVATION AND ASSESSMENT**

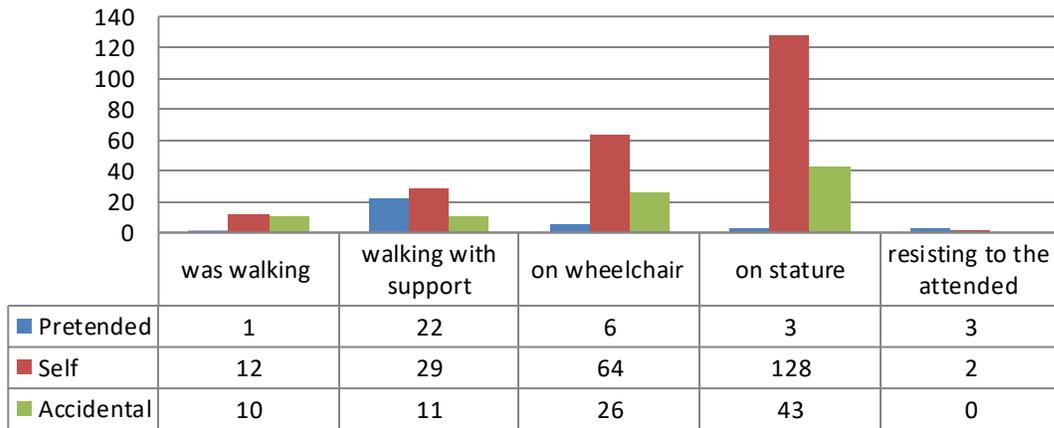
		<b>Pretended</b>	<b>Self</b>	<b>Accidental</b>	<b>Total</b>
<b>The entrance mode in the ward subdivided</b>	was walking	1	12	10	23
	walking with support	22	29	11	62
	on wheelchair	6	64	26	96
	on stature	3	128	43	174
	resisting to the attended	3	2	0	5
<b>First contact with the ward categories were</b>	look toward attendant	17	29	9	55
	look toward nurse/doctor	14	68	41	123
	semi-conscious	0	69	26	95
	unconscious	0	61	10	71
	didn't response	4	8	3	15
<b>the nurse patient first interaction mode categories</b>	realistic	0	46	25	71
	confused	9	83	36	128
	convincing	1	21	5	27
	social	1	17	13	31
	pretending	23	8	2	33
<b>appearance including</b>	good looking	7	11	11	29
	informal dressing	27	90	46	163
	reflecting a dirty look	1	80	23	104
	half necked	0	48	9	57
	completely necked	0	5	1	6
<b>Hair style category</b>	stylish	13	5	10	28
	partially set	29	91	48	168
	unusual	2	32	12	46
	dirty with dust	0	24	5	29
	dirty with secretion	0	81	15	96
<b>vomiting and oral secretions</b>	vomiting	4	71	31	106
	nausea	10	44	31	85
	water fluid	0	17	2	19
	thick oral secretion	0	71	16	87
	bloody secretion	0	13	4	17
<b>category seeking help</b>	crying	17	76	29	122
	weeping	9	83	16	108
	making noise excessively	1	43	13	57
	calling names	5	10	23	38
	laughing	2	5	4	11
<b>observable behavior</b>	extremely fearful	2	46	36	84
	trembling	7	71	16	94
	death feeling	0	26	10	36

	sticking to the attendant'	15	19	3	37
	cool and calm	4	16	14	34
<b>only female include</b>	make up exceptional	1	3	5	9
	usual healthy look	10	26	12	48
	unusual	0	23	6	29
	no makeup	6	32	9	47
	<b>unhealthy</b>	0	32	7	39
unique symptoms there were four subcategories those include, breathing, tongue, nails and eyes, in the breathing the sub-sub categories	normal	21	33	24	78
	rapid	14	127	52	193
	slow deep	0	68	12	80
<b>in tongue category</b>	normal	35	64	35	134
	dry	0	113	46	159
	bite or any ulcer	0	51	7	58
<b>In nails category</b>	normal	33	142	70	245
	blue	0	83	17	100
	used nail paint	2	8	1	11
<b>In the eyes category</b>	normal	31	142	63	236
	pinch forcibly	4	8	0	12
	pupil dilated	0	82	27	109

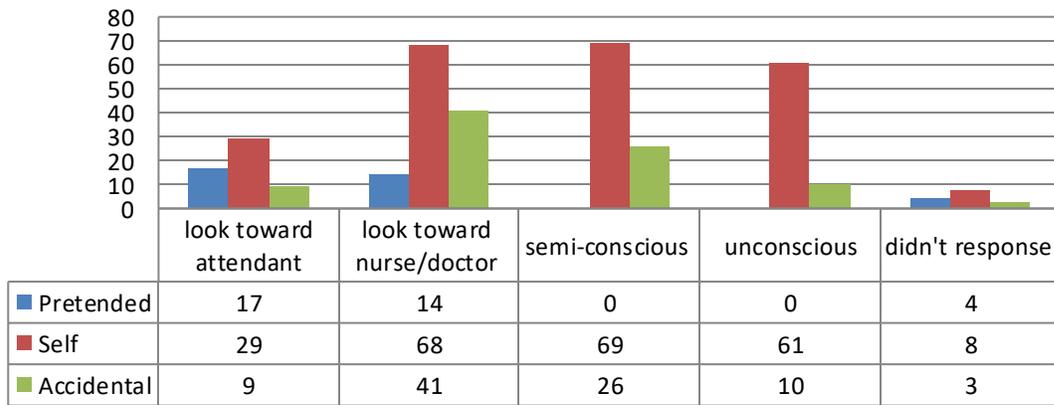
(Figure-A)

**POISONING OBSERVATION AND ASSESSMENT**

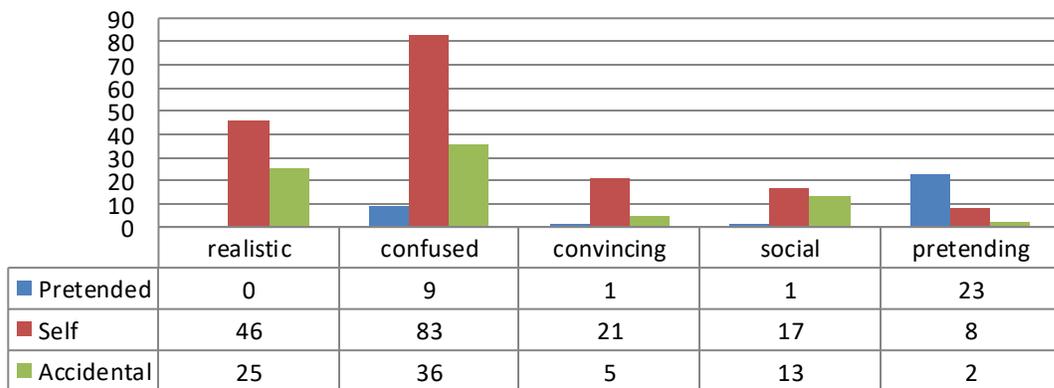
### The Entrance Mode In The Ward Subdivided



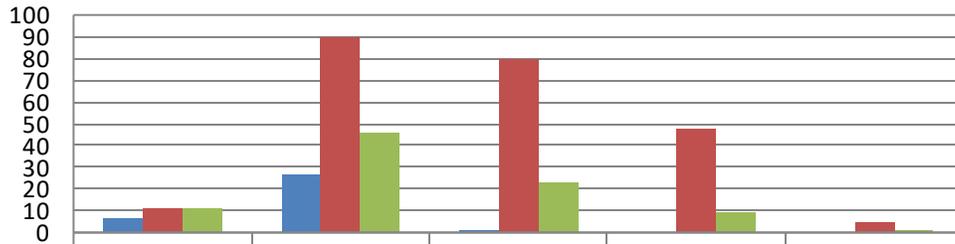
### First Contact With The Ward Categories



### The Nurse Patient First Interaction Mode Categories

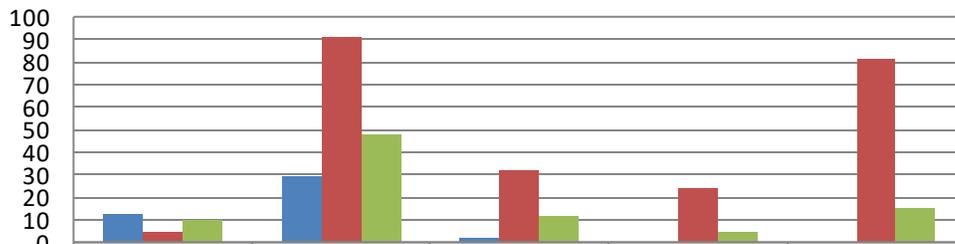


### Appearance Including



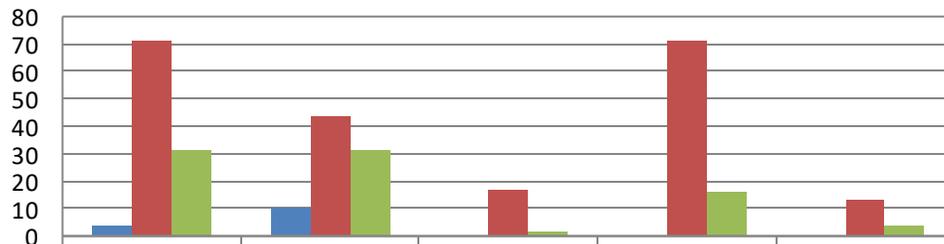
	good looking	informal dressing	reflecting a dirty look	half necked	completely necked
■ Pretended	7	27	1	0	0
■ Self	11	90	80	48	5
■ Accidental	11	46	23	9	1

### Hair Style Category



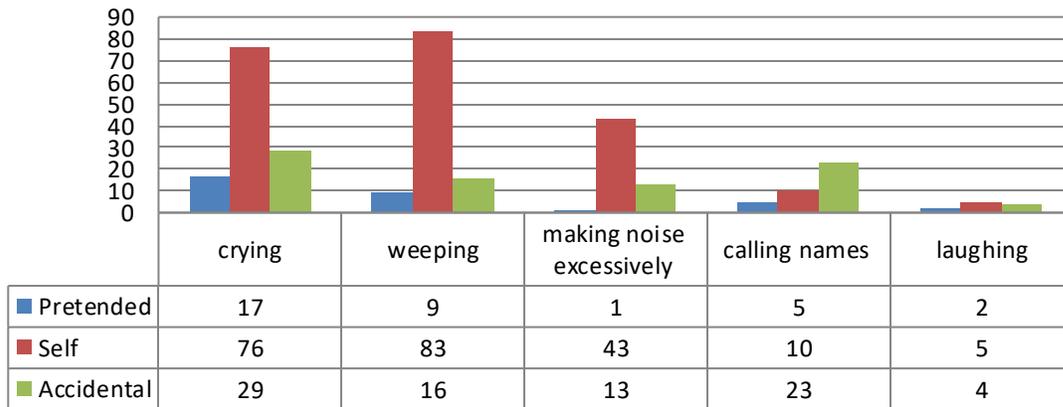
	stylish	partially set	unusual	dirty with dust	dirty with secretion
■ Pretended	13	29	2	0	0
■ Self	5	91	32	24	81
■ Accidental	10	48	12	5	15

### Vomiting And Oral Secretions

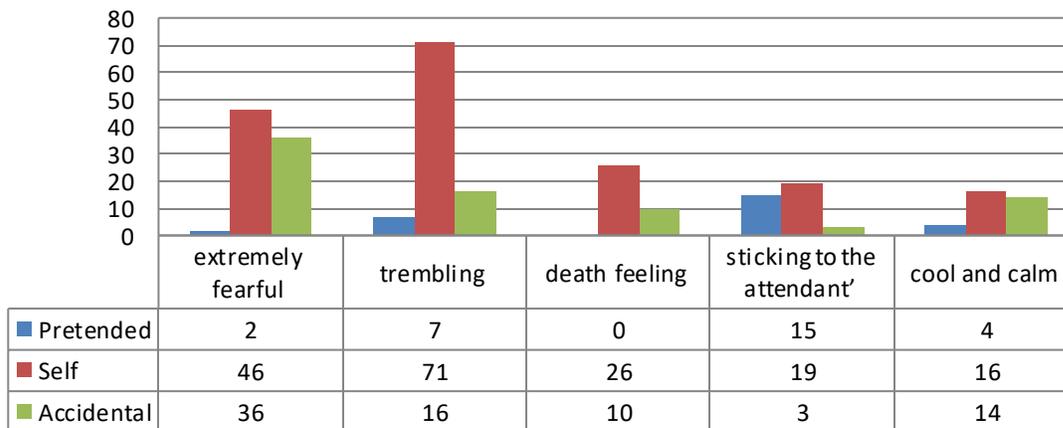


	vomiting	nausea	water fluid	thick oral secretion	bloody secretion
■ Pretended	4	10	0	0	0
■ Self	71	44	17	71	13
■ Accidental	31	31	2	16	4

### Category Seeking Help



### Observable Behavior



### Only Female Include

