

## Phenomenology of self-restraint.

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THE PHENOMENOLOGY OF SELF-RESTRAINT

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ABSTRACT

Self-restraint is often reported in individuals with mental retardation who show self-injurious behavior. In this study, the phenomenology and prevalence of self-restraint in individuals showing self-injury and wearing protective devices and those showing self-injury but not wearing protective devices was compared. A high prevalence of self-restraint in the whole sample of individuals showing self-injury was identified (67/88, 76.1%) and self-restraint was more prevalent in a group showing self-injury but not wearing protective devices (43/47, 91.5%) than in a group showing self-injury and wearing protective devices (24/41, 58.5%). Individuals who did not wear protective devices showed a greater number of topographies of self-restraint than individuals who did wear protective devices. These findings are discussed with reference to the purely topographical definition of self-restraint employed and the potential equivalence of protective devices and self-restraint.

## THE PHENOMENOLOGY OF SELF-RESTRAINT

There are numerous descriptions in single case reports of how a person showing self-injurious behavior may seek "restraint", that is, will apparently endeavour to restrict their own responding. These behaviors have been termed 'self-restraint' and three broad categories have been identified by Isley Kartsonis, and McCurley (1991). Firstly, those behaviors that involve the restriction of body parts using clothing or material e.g., 'wrapping body in and carrying a sheet' (Peterson & Peterson, 1968), 'pushing hands down trousers' (Young & Wincze, 1974), 'pushing arms under coat' (Korten et al., 1975), 'wrapping towel or clothing around neck' (Lucero et al., 1976), 'pushing hands under clothes' (Duker, 1976), 'pulling clothes over shoulders, covering head' (Singh et al., 1980), 'wrapping cloth around ankles' (Herman, 1980), 'rolling body in bedclothes' (Francezon et al., 1981), 'wrapping arms inside jumper' (Kinnel, 1984) and 'wrapping hands inside shirt' (Hardy et al., 1984). Secondly, those behaviors that involve the restriction of movement using the person's own body e.g., holding arms behind back (Myers & Deibert, 1971), sitting on hands (Ball et al., 1975), and lying with hands behind head (Zehr & Theobald, 1978). Thirdly, those behaviors that involve holding onto objects e.g., holding a cup (Lovaas & Simmons, 1969), a helmet (Muttar et al., 1975), a ball, (Tarply & Schroeder, 1979), 'clinging to furniture' (Callias et al., 1973) or 'clutching objects' (Herman, 1980). Finally, a fourth category would appear to be those who seek restricted movement from others e.g., 'persuading others to give physical restraint' (Saposnek & Watson, 1974), 'gesturing for hands to be held' (Ball et al., 1975), 'clinging to adults and children' (Callias et al., 1973), and 'wanting to be held' (May & Ostler, 1981).

Although the forms of "self restraint" anecdotally described in the literature are many and varied, it is apparent that the behaviors are not necessarily unusual or specifically associated with self-injurious behavior. It would appear to be other parameters of the

behaviors, evident in the definitions of self-restraint employed by the authors themselves, that have resulted in a behavior being labelled “self-restraint”. Several authors for example have commented on the large amount of time individuals spend engaged in self-restraint (Bruhl et al., 1982; Oliver et al., 1998; Rojahn et al., 1978; Silverman et al., 1984), and the control that it seems to exert over self-injurious behavior (Murphy, 1978). The notions of protecting one’s self and controlling self-injurious behavior are evident in the descriptions of Myers and Deibert (1971), Korten et al., (1975) and Lucero et al., (1976). Additionally, the negative covariation between the presence of self-restraint and protective clothing and devices (Rojahn et al., 1978; Silverman et al., 1984) implies functional similarity with regard to escape from or avoidance of self-injury. Evidence for an historical association between reduced self-injury and the development of self-restraint may also be derived from studies of restraint fading and the development of ‘symbolic restraint’ (e.g. Fox & Dufrense, 1984; Lerman et al., 1994; Oliver et al., 1998; Pace et al., 1986).

Other authors have noted that some individuals appear to have a preference for restraint, as evidenced by the use of the term "addiction" (Corbett, 1975; Kinnel, 1984), the observation of negative emotion in response to restraint termination (Ball et al., 1975; Lovaas & Simmons, 1969; Myers & Diebert, 1971; Shear et al., 1971) and the use of restraint as positive reinforcement in operant conditioning paradigms (Favell, McGimsey & Jones, 1978; Foxx & Defrense, 1984). Negative response to restraint removal and restraint seeking behaviors are also commonly reported in Lesch-Nyhan syndrome in which self-injury is severe and the term self-restraint is frequently used (Anderson, Dancis & Alpert, 1978; Ball et al., 1985; Buzas, Ayllon & Collins, 1981; Christie et al., 1982; Dizmang & Cheatham, 1970; Duker, 1975; Gilbert, Spellacy & Watts, 1979; Wurtele et al., 1984).

If it is accepted that self-restraint has a number of parameters in addition to topography then the problem of common definition is highlighted as different studies might

include different parameters within definitions. This might account for some of the variability in prevalence studies. Powell et al., (1996) reported a prevalence of 46% and Bruhl et al. (1982) 55.5%, while Rojahn (1986) reported a prevalence of self-restraint of 12% in participants showing SIB and 5% in a comparison group. Fovel et al. (1989) described self-restraint in between 2.5% and 2.9% of residents of a school for retarded persons and it can be estimated that 9.6% of those showing self-injury showed self-restraint. Schroeder et al. (1982), in a brief descriptive report, demonstrated that "self restraint" was not observed in seven participants who showed self-injurious behavior and wore protective devices but was observed in 15 to 20% of 15 participants who showed self-injurious behavior but did not wear protective devices. Finally, Favell et al. (1981) reported that of 21 participants, three (14.3%) preferred restraint. While the variability of 0% to 55.5% of those showing self-injurious behavior who show self restraint is likely to be related to sample sizes, participant characteristics and the time period within which the behavior occurred, the variability is probably also strongly related to the parameters of self-restraint operationalized in definitions. It is also clear from the small scale study by Schroeder et al. that protective devices can influence the manifestation of self-restraint and this finding warrants replication with larger samples.

To date, only one study has examined the prevalence of individual topographies of self-restraint evident in the case study literature (Powell et al., 1996). Here, the forms of self-restraint exhibited by 46 individuals residing in a state institution were "holds or squeezes objects" (50%), "holds onto others or others' clothing" (41.3%), "positions self to restrain" (39.1%), "wraps self in own clothing" (21.7%), "holds onto self" (21.7%), "wears item to discourage SIB" (17.4%) and "chooses mechanical restraint" (8.4%). Only 7 forms of self-restraint were considered in this study, and no data were collected on the frequency or duration of each form. The first aim of the present study was therefore to examine the

prevalence of self-restraint topographies in individuals showing self-injurious behavior using a measure that assessed a broader range of topographies of self-restraint than has been studied before. To move the literature forward, we also included an assessment of an important parameter in the measurement of self-restraint, namely, response duration. The second aim was to compare the prevalence, forms and duration of self-restraint shown by those individuals who wore protective devices and those not wearing protective devices.

## METHOD

### Participants

88 individuals with developmental disabilities who had taken part in a previous study investigating the prevalence of SIB (Oliver et al., 1987), took part in the present study. All individuals had shown SIB in the previous four months according to the following definition:

“Repeated, self-inflicted, non-accidental injury, producing bruising, bleeding, or other temporary or permanent tissue damage. Also, any such behavior which would produce bruising, bleeding or tissue damage were it not for protective devices, restraints, specific medical or psychological interventions in use” (Oliver et al., 1987, p.148).

Of the 88, 41 individuals wore protective devices (e.g., arm splints, gloves, helmets) that allowed at least some flexion of the arms (protective devices group)<sup>1</sup>. 16 (39%) wore arm splints or bands, 6 (15%) wore socks or gloves on the hands, 4 (10%) wore a helmet or other

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<sup>1</sup> In the Oliver et al., (1987) survey, 77 individuals had worn protective devices for some or all of the day in the previous four months. In the year following publication of the survey, 5 had died, 2 had moved away, 2 had missing data and 14 declined to take part in further research. 13 participants wore straight arm splints 100% of the time that would preclude them from engaging in all possible forms of self-restraint. Consequently, the remaining 41 individuals took part in the present study (see also Murphy et al., 1993)

head protection, 10 (24%) wore “other” devices and 5 (12%) wore “multiple devices”. 14 (34.1%) participants wore their devices all of the time.

The remaining 47 individuals showed forms and rates of self-injurious behavior similar to those in the protective devices group (predominantly head banging and/or head punching) but did not wear protective devices (no protective devices group). Table 1 shows the participant characteristics. The two groups were similar in terms of age, gender, degree of developmental disability, and severity of SIB.

+++ Insert Table 1 about here +++

### Procedure.

All participants were assessed using the Self-restraint Questionnaire (SRQ)<sup>2</sup>, a 23-item questionnaire developed by one of the authors (C.O) shortly after the Oliver et al., (1987) study had been conducted. Items were included in the SRQ based on reports of topographies of self-restraint in the published literature or behaviors that had been observed informally in the Oliver et al. (1987) study at the time of screening. Each item on the SRQ describes a single topography of self-restraint (e.g., “Does the individual entwine his/her hands in the front part of the clothes that he/she is wearing?”). Each item on the questionnaire was also accompanied by an illustration of the topography of self-restraint e.g, a drawing of a man entwining his arms in his own clothing . For each item, approximate frequency of occurrence over the last month is rated on a five-point scale: 0 = “never”; 1 = “some of the time”; 2 = “half of the time”; 3 = “most of the time”; and 4 = “all of the time”.

The SRQ has four subscales, the content of which is based on the classes described by Isley et al. (1991) and a review of the literature. The subscales are: “use of clothing or materials” (9 items: 1 to 9 in table 3; maximum possible score = 36), “use of body” (9 items:



12, 13, 15 to 21; maximum possible score = 36), “use of objects” (3 items: 10, 11 and 14; maximum possible score = 12) and “use of other people” (2 items: 22 and 23; maximum possible score = 8). Each participant had been visited in their normal day-time setting and a relative or care-worker who knew the participant well had completed the questionnaire.

Psychometric Analysis. Given that the SRQ had not been subjected previously to psychometric study, we conducted a preliminary psychometric analysis. Reliability of the SRQ was examined by having second raters (e.g., another relative or care-worker) independently score each item on the questionnaire. Data were collected on 29 individuals, 9 of whom had taken part in the Oliver et al. (1987) study and 20 who were assessed in the original Oliver et al. study but were subsequently found to live outside the survey region and had therefore been excluded from that study. Inter-rater reliability (intraclass correlation coefficients) was calculated for each item on the SRQ and sub-scale scores. We estimated validity in two ways. Firstly, by directly observing 14 individuals identified as showing self-restraint (self-restraint group) and checking for at least one exhibition of the items identified on the SRQ by carers. Observations were conducted using a 10-s momentary time-sampling method (1-s observation, 9-s record) in three 30-minute sessions conducted once in the morning, at lunchtime, and in the afternoon. Definitions of forms of self-restraint for the observations were taken from the SRQ and inter-observer agreement exceeded 85% for each topography of self-restraint recorded. Validity was computed as the percentage of cases showing a given item on the SRQ confirmed by direct observation. Secondly, scores obtained on the SRQ for the group of 14 individuals in the self-restraint group were compared to scores obtained for another group of 14 individuals who did not show SIB (no self-injury group), matched on age, gender and degree of mental retardation as determined by the

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<sup>2</sup> Copies of the questionnaire are available from the first author.

Vineland Adaptive Behavior Scales. The results of the psychometric analyses are presented in Table 2.

+++ Insert Table 2 about here +++

Mean inter-rater agreement across items was .49 (range, -.04 to .89). Seven items had poor reliability (i.e., inter-rater agreement was less than .3). However, this was mainly due to insufficient variance being available in the data. Items with poor reliability were; “puts hands in tight places”, “wraps hand(s) into material”, “puts hands behind neck”, “puts hands between legs”, “folds arms”, “arms otherwise entwined”, and “locks fingers together”. The reliability coefficients for the subscale scores were .87, .17, .72 and .61 for “use of clothing or materials”, “use of body”, “use of objects” and “use of other people” subscales respectively. Direct observation validation was 89.6% (range, 64.2% to 100%). The data in Table 2 show that all 14 (100%) participants identified as showing self-restraint were reported to exhibit at least one form of self-restraint on the SRQ (i.e., scored “some of the time” or greater on at least one item). Only one of the 14 (7.1%) individuals who did not show SIB was reported to show at least one form of self-restraint. For this participant, the rater had endorsed the item ‘arms folded’ for ‘some of the time’.

## RESULTS

Of the 88 individuals who participated in the study, 67 (76.1%) engaged in at least one form of self-restraint on the Self-restraint Questionnaire (i.e., scored “some of time” or greater on at least one item). 24 (58.5%) of those in the protective devices group and 43 (91.5%) of those in the no protective devices group engaged in at least one form of self-

restraint. The prevalence of self-restraint was significantly higher in those who did not wear protective devices than in those who wore protective devices, ( $N = 87$ ,  $\chi^2 = 13.09$ ,  $p < .0005$ ). Across both groups, males were more likely to show at least one form of self-restraint than females, ( $N = 87$ ,  $\chi^2 = 5.07$ ,  $p < .05$ ). There was no effect of age on the prevalence of self-restraint.

Table 3 shows the scoring distribution for each item of the instrument and the relative prevalence of each item. Relative prevalence is defined as the percentage of people for whom an item on the questionnaire received a score of above zero. The relative prevalence of items for those in the no protective devices group ranged from 13.3% ('puts arms into clothes') to 60.9% ('asks for hands to be held'). In the protective devices group, relative prevalence of items ranged from 0% ('puts hands in pockets') to 17.1% ('puts hands between legs' and 'asks for hands to be held').

+++ Insert Table 3 here +++

In order to determine whether individuals in the no protective devices group were more likely to show particular items on the SRQ than individuals in the protective devices group, a series of chi-square analyses were conducted. To avoid Type 1 errors, we applied the Bonferroni correction to the required alpha level which was set at .002. Results indicated that individuals in the no protective devices group were more likely than individuals in the protective devices group to show the items 'puts hands in trousers' ( $\chi^2(1) = 12.80$ ,  $p < .0001$ ), 'puts hands into pockets' ( $\chi^2(1) = 12.12$ ,  $p < .0001$ ), 'carries object everywhere' ( $\chi^2(1) = 10.67$ ,  $p < .001$ ), 'asks for hands to be held' ( $\chi^2(1) = 16.51$ ,  $p < .0001$ ), and 'asks for arms to be held' ( $\chi^2(1) = 17.99$ ,  $p < .0001$ ).

Figure 1 shows the number of forms of self-restraint displayed by individuals in each group. Individuals in the no protective devices group showed a greater number of forms of self-restraint (mean = 5.55, SD = 3.96) than individuals in the protective devices group (mean = 1.51, SD = 2.11), ( $t(86) = 5.86, p < .0001$ ). There was no effect of gender or age on the number of forms of self-restraint shown.

+++ Insert Figure 1 about here +++

An examination of differences between the two groups on subscale scores (with an alpha level set at .0125) revealed significantly higher mean scores for the no protective devices group than the protective devices group on the ‘use of clothing’ subscale (mean of 2.53 vs. 0.55; ( $t, \text{unequal variances } (56) = 4.09, p < .001$ )), the ‘use of body’ subscale (mean of 2.20 vs. 0.93; ( $t(84) = 3.06, p < .005$ )) and ‘use of other people’ subscale (mean of 1.45 vs. .32; ( $t, \text{unequal variances}(66) = 4.09, p < .001$ )) but not for the ‘use of objects’ subscale (means of .96 vs. .42).

## DISCUSSION

In contrast to most previous research, this study has focussed on the identification of specific and discrete topographies of self-restraint behaviors, together with an estimate of their duration. Fifteen items and three subscales in the self-restraint questionnaire have acceptable levels of inter-rater reliability and there is good agreement on the presence of self-restraint behavior between the questionnaire and direct observation methods. Overall the psychometric properties of the measure are good although caution is warranted for some of the individual items and the subscale “use of body”.

The results presented in table 3 show a wide variety of forms of self-restraint to be evident and this is in accordance with the case report literature and cohort studies. The high prevalence of at least one form of self-restraint in both groups is striking and is higher than that previously reported. Clearly this is largely attributable to defining self-restraint by measurement of a single parameter only i.e., a single topography of behavior occurring for 'some of the time' was deemed sufficient for self-restraint to be present in the current study. However, it is notable that in a small sample of individuals who did not show self-injury, these topographies of behavior were rarely evident. This latter finding requires replication using a larger sample.

In addition to the diversity of topographies evident, of particular note is the relatively high percentage of individuals, in both groups, that asks for their hands to be held and the high percentage of the no protective devices group that asks for their arms to be held. Powell et al. (1996) found that 41.3% of their institutionalized sample of individuals who showed both SIB and self-restraint held onto others or others' clothing. Taken together, these findings indicate that this form of restraint warrants further attention, particularly as it might be argued that this topography links socially reinforced self-injury with the development of self-restraint.

The lower prevalence of self-restraint in the protective devices group in comparison to the no protective devices group is in accordance with previous cohort studies (Schroeder et al., 1982) and the findings from single case literature (Rojahn et al., 1978; Silverman et al., 1984). Taken together these findings suggest that self-restraint might be functionally similar to protective devices by virtue of the capacity to restrict or protect the individual from self-injury. It is possible that this finding in this study might be explained by the incompatibility of self-restraint with the protective devices that were worn. This seems unlikely as firstly, a number of the topographies included in the questionnaire would be compatible with devices

e.g. asking for hands or arms to be held, carrying objects, pushing hands in tight places.

Secondly, participants wearing splints could flex them in a limited fashion, allowing various forms of self-restraint. Thirdly, the comparison on individual topographies of self-restraint indicated that nearly all topographies were evident in the protective devices group.

This approach to studying self-restraint has shown that the topographies of behavior considered to be self-restraint are extremely common in individuals who show self-injury but who do not wear protective devices and that the duration of the behavior is also high in this group. To fully understand self-restraint it may be critical to include other parameters of self-restraint, not considered in the present study. The self-restraint questionnaire could be developed to include a consideration of behavioral correlates of preference for restraint and control over self-injury for example. This separate measurement of the parameters of self-restraint could prove important in further research that focuses on self-restraint, compulsive behaviors, stereotyped behavior and self-injury (see Bodfish et al., 1995 and King, 1993). Clear separation between these constructs will help to identify meaningful associations.

This study has described a measure of discrete behaviors identified in past research as likely to comprise self-restraint. The resultant prevalence of self-restraint is higher than previous estimates and this reflects the approach to studying self-restraint by including a large number of potential topographies and measurement of their duration. Further research should seek to examine the association between topographies of self-restraint and the parameters evident in the case study and cohort literature, namely: behavioral correlates of preference for restraint and control over existing or past self-injury, in addition to the duration for which the behavior is exhibited.

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Table 1  
 Characteristics of Participants in the Protective Devices and No Protective Devices Groups

| Group                 | n  | Age  |     | Gender (%) |        | Estimated Level of MR <sup>a</sup> (%) |                  |          | Residence (%) |      |      | Severity of SIB <sup>b</sup> |  |
|-----------------------|----|------|-----|------------|--------|--|------------------|----------|---------------|------|------|------------------------------|--|
|                       |    | Mean | SD  | Male       | Female | Moderate\ Mild                         | Severe\ Profound | Hospital | Group home    | Home | Mean | SD                           |  |
| Protective devices    | 41 | 21.7 | 9.6 | 53.7       | 46.3   | 2.5                                    | 97.5             | 66.0     | 17.0          | 17.0 | 4.89 | 3.11                         |  |
| No protective devices | 47 | 18.1 | 5.4 | 46.8       | 53.2   | 4.0                                    | 96.0             | 8.5      | 57.5          | 34.0 | 4.43 | 2.30                         |  |

<sup>a</sup>Mental retardation. <sup>b</sup> Topographies of SIB occurring less than once per week were scored as 1, topographies of SIB occurring once or more per week but less than once per hour were scored as 2, and topographies of SIB occurring once per hour or more were scored as 3. These scores were then summed across a person's topographies to give an overall severity index.

Table 2

Inter-rater Reliability Coefficients for Each Item on the Self-restraint Questionnaire and Item Score Distribution and Relative Item Prevalence for those who showed self-restraint (self-restraint group) and those who did not show SIB (no self-injury group) in the Validity Analysis.

| Item                               | Reliability Analysis                      |  | Validity Analysis                           |      |      |      |  |     |     |     |     |      |
|------------------------------------|---|--|---|------|------|------|--|-----|-----|-----|-----|------|
|                                    | Inter-rater agreement<br>( <i>n</i> = 29) |  | Self-restraint Group<br>( <i>n</i> = 14)    |      |      |      | No Self-injury Group<br>( <i>n</i> = 14) |     |     |     |     |      |
|                                    |   |  | Item score distribution (in %) <sup>a</sup> |      |      |      | Item score distribution (in %)           |     |     |     |     |      |
|                                    |   |  | 1   | 2    | 3    | 4    | Prev <sup>b</sup>                        | 1   | 2   | 3   | 4   | Prev |
| 1. Entwines hands in clothes       | .85                                       |  | 35.7  | 0.0  | 0.0  | 0.0  | 35.7                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 2. Puts arms into clothes          | .89                                       |  | 14.3  | 14.3 | 7.1  | 0.0  | 35.7                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 3. Pulls sleeves over hands        | .47                                       |  | 35.7  | 0.0  | 14.3 | 7.1  | 57.1                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 4. Puts hand into trousers         | .52                                       |  | 35.7  | 0.0  | 7.1  | 7.1  | 50.0                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 5. Puts hands into pockets         | .72                                       |  | 14.3  | 0.0  | 7.1  | 0.0  | 21.4                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 6. Wraps material round both arms  | .65                                       |  | 7.1   | 0.0  | 0.0  | 7.1  | 14.3                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 7. Wraps material round arm singly | .66                                       |  | 14.3  | 0.0  | 0.0  | 0.0  | 14.3                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 8. Wraps hand(s) into material     | .13                                       |  | 35.7  | 0.0  | 7.1  | 14.3 | 57.1                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 9. Wraps body in material          | .84                                       |  | 28.6  | 0.0  | 0.0  | 0.0  | 28.6                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 10. Entwines arms in furniture     | .73                                       |  | 28.6  | 0.0  | 0.0  | 0.0  | 28.6                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 11. Puts hands in tight places     | .26                                       |  | 35.7  | 0.0  | 0.0  | 0.0  | 35.7                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 12. On stomach, hands behind back  | -. <sup>b</sup>                           |  | 14.3  | 0.0  | 7.1  | 0.0  | 21.4                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 13. Lies/sits, hands under body    | .33                                       |  | 0.0   | 0.0  | 14.3 | 0.0  | 14.3                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 14. Carries object everywhere      | .83                                       |  | 28.6  | 7.1  | 14.3 | 14.3 | 64.3                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 15. Sits on hands                  | .70                                       |  | 28.6  | 0.0  | 14.3 | 0.0  | 42.9                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 16. Holds hands behind back        | .58                                       |  | 21.4  | 0.0  | 0.0  | 0.0  | 21.4                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 17. Puts hands behind neck         | .17                                       |  | 7.1   | 0.0  | 0.0  | 0.0  | 7.1                                      | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 18. Puts hands between legs        | -.04                                      |  | 35.7  | 0.0  | 0.0  | 0.0  | 35.7                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 19. Folds arms                     | .21                                       |  | 21.4  | 0.0  | 7.1  | 0.0  | 28.6                                     | 7.1 | 0.0 | 0.0 | 0.0 | 7.1  |
| 20. Arms otherwise entwined        | .14                                       |  | 21.4  | 0.0  | 0.0  | 0.0  | 21.4                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 21. Locks fingers together         | .01                                       |  | 28.6  | 0.0  | 0.0  | 0.0  | 28.6                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 22. Asks for hands to be held      | .60                                       |  | 42.9  | 7.1  | 0.0  | 0.0  | 50.0                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
| 23. Asks for arms to be held       | .44                                       |  | 28.6  | 7.1  | 7.1  | 0.0  | 42.9                                     | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |

<sup>a</sup>1 = some of the time, 2 = half of the time, 3 = most of the time, 4 = all of the time. <sup>b</sup> Relative prevalence (percentage of participants with a score of “1” or more on that item). <sup>c</sup> Incalculable due to insufficient variance in the data.



Table 3  
Item Score Distribution and Relative Item Prevalence for the no protective devices group and the protective devices group.

| Item                               | No Protective Devices Group<br>(n = 47)     |      |     |     |                   | Protective Devices Group<br>(n = 41) |     |     |     |      |
|------------------------------------|---|------|-----|-----|-------------------|--------------------------------------|-----|-----|-----|------|
|                                    | Item score distribution (in %) <sup>a</sup> |      |     |     |                   | Item score distribution (in %)       |     |     |     |      |
|                                    | 1   | 2    | 3   | 4   | Prev <sup>b</sup> | 1                                    | 2   | 3   | 4   | Prev |
| 1. Entwines hands in clothes       | 22.2  | 2.2  | 4.4 | 0.0 | 28.9              | 7.3                                  | 0.0 | 2.4 | 0.0 | 9.8  |
| 2. Puts arms into clothes          | 11.1  | 0.0  | 2.2 | 0.0 | 13.3              | 2.4                                  | 0.0 | 0.0 | 2.4 | 4.9  |
| 3. Pulls sleeves over hands        | 19.6  | 2.2  | 4.3 | 0.0 | 26.1              | 4.9                                  | 0.0 | 0.0 | 2.4 | 7.3  |
| 4. Puts hand into trousers         | 28.3  | 8.7  | 4.3 | 0.0 | 41.3              | 2.5                                  | 2.5 | 0.0 | 2.5 | 7.5  |
| 5. Puts hands into pockets         | 26.1  | 0.0  | 0.0 | 0.0 | 26.1              | 0.0                                  | 0.0 | 0.0 | 0.0 | 0.0  |
| 6. Wraps material round both arms  | 10.6  | 4.3  | 0.0 | 0.0 | 14.9              | 0.0                                  | 0.0 | 0.0 | 2.4 | 2.4  |
| 7. Wraps material round arm singly | 2.1   | 4.3  | 2.1 | 0.0 | 8.5               | 0.0                                  | 0.0 | 0.0 | 0.0 | 0.0  |
| 8. Wraps hand(s) into material     | 12.8  | 6.4  | 0.0 | 0.0 | 19.1              | 0.0                                  | 0.0 | 0.0 | 2.6 | 2.6  |
| 9. Wraps body in material          | 4.3   | 2.2  | 0.0 | 0.0 | 6.5               | 0.0                                  | 0.0 | 0.0 | 2.4 | 2.4  |
| 10. Entwines arms in furniture     | 19.1  | 0.0  | 0.0 | 0.0 | 19.1              | 7.5                                  | 0.0 | 0.0 | 2.5 | 10.0 |
| 11. Puts hands in tight places     | 17.0  | 0.0  | 0.0 | 0.0 | 17.0              | 5.1                                  | 0.0 | 0.0 | 0.0 | 5.1  |
| 12. On stomach, hands behind back  | 2.2   | 0.0  | 0.0 | 0.0 | 2.2               | 4.9                                  | 0.0 | 2.4 | 0.0 | 7.3  |
| 13. Lies/sits, hands under body    | 14.9  | 0.0  | 0.0 | 2.1 | 17.0              | 0.0                                  | 0.0 | 0.0 | 0.0 | 0.0  |
| 14. Carries object everywhere      | 32.6  | 2.2  | 4.3 | 2.2 | 41.3              | 0.0                                  | 0.0 | 2.5 | 7.5 | 10.0 |
| 15. Sits on hands                  | 19.1  | 2.1  | 0.0 | 0.0 | 21.3              | 17.1                                 | 0.0 | 0.0 | 0.0 | 17.1 |
| 16. Holds hands behind back        | 17.4  | 2.2  | 0.0 | 0.0 | 19.6              | 4.9                                  | 0.0 | 0.0 | 0.0 | 4.9  |
| 17. Puts hands behind neck         | 15.2  | 2.2  | 0.0 | 0.0 | 17.4              | 4.9                                  | 0.0 | 0.0 | 0.0 | 4.9  |
| 18. Puts hands between legs        | 37.0  | 2.2  | 0.0 | 2.2 | 41.3              | 14.7                                 | 2.4 | 2.4 | 0.0 | 19.5 |
| 19. Folds arms                     | 37.0  | 2.2  | 0.0 | 0.0 | 39.1              | 7.3                                  | 0.0 | 0.0 | 0.0 | 7.3  |
| 20. Arms otherwise entwined        | 13.0  | 2.2  | 0.0 | 0.0 | 15.2              | 2.4                                  | 2.4 | 0.0 | 2.4 | 7.3  |
| 21. Locks fingers together         | 28.3  | 0.0  | 0.0 | 0.0 | 28.3              | 2.4                                  | 0.0 | 0.0 | 0.0 | 2.4  |
| 22. Asks for hands to be held      | 41.3  | 10.9 | 6.5 | 2.2 | 60.9              | 12.2                                 | 0.0 | 2.4 | 2.4 | 17.1 |
| 23. Asks for arms to be held       | 28.6  | 0.0  | 4.5 | 0.0 | 43.2              | 2.4                                  | 0.0 | 0.0 | 0.0 | 2.4  |

<sup>a</sup>1 = some of the time, 2 = half of the time, 3 = most of the time, 4 = all of the time. <sup>b</sup> Relative prevalence (percentage of participants with a score of “1” or more on that item)

## Figure Caption

Number of forms of self-restraint shown by individuals in the protective devices group and no protective devices group.

