

Sexuality and People With Intellectual Disabilities: Assessment of Knowledge, Attitudes, Experiences, and Needs

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Abstract

The topic of sexuality and romantic relationships of people with mild to moderate intellectual disabilities was examined. We developed a questionnaire to investigate the 76 respondents' sexual knowledge, attitudes, experience, and needs. During the interviews, observational data were gathered to check the validity of the instrument. Results show that sexuality and romantic relationships are important aspects in the lives of many persons with intellectual disabilities. Male respondents generally reported more sexual needs than did females. Correlations were found between sexual knowledge and attitudes and between attitudes and experience or needs, suggesting that general behavioral models may be fruitfully used to further explore the topic of sexuality among people with intellectual disabilities.

For many years, people with intellectual disabilities have been assumed to be asexual and have no need for loving or fulfilling relationships with others. Their individual rights to sexuality, which are undisputed for the rest of society, have traditionally been neglected or denied (cf. Milligan & Neufeldt, 2001). For example, as recently as 2002, the American Association on Mental Retardation adopted a sexuality policy statement, which expressly noted that people with mental retardation and related disabilities have the right to start and end relationships with others and to express themselves sexually (American Association on Mental Retardation, 2002).

This policy, if taken seriously, calls for professional and research attention to issues of sexuality and romantic relationships of people with intellectual disabilities. Caregivers must be enabled to support their clients in developing gratifying relationships and exploring their sexual needs. There are, however, at least two obstacles. First, addressing issues of sexuality for people with intellectual disabilities may still be taboo. Katz, Shemesh, and Bizman (2000), for example, showed that university students had rather negative attitudes toward the sexuality of persons with mental retardation, particularly concerning their ability to act responsibly in

sexual matters and their rights to personal choice. Karelou (2003) found a discrepancy between laypeople's attitudes toward sexuality of the general public and their attitudes toward sexuality of people with learning disabilities. The same may also apply to parents, relatives, and caregivers (Aunos & Feldman, 2002; McCabe & Cummins, 1996; Yool, Langdon, & Garner, 2003). Second, if caregivers are open to issues of romantic relationships and sexuality, there is little research-based guidance about how to deal with these issues in practice. Christian, Stinson, and Dotson (2001), for instance, found that the staff of an agency supporting women with developmental disabilities felt comfortable with the idea of women expressing their sexuality, but were not trained to deal with this facet of their job and could not rely on any agency policy. The development of training programs and agency policy starts with a clear view of the present situation. To what extent do people with intellectual disabilities have experience with sexuality and romantic relationships? What are their needs? How do these needs and experiences relate to their attitudes and sexual knowledge?

A growing body of research, therefore, is focused on the sexuality and romantic relationships of people with intellectual disabilities. In the ma-

majority of the studies, the researchers emphasized the potentially negative and problematic sides of sexuality, such as sexual abuse (Gust, Wang, Grot, Ransom, & Levine, 2003; Lumley & Miltenberger, 1997; McCurry et al., 1998; Sundram & Stavis, 1994), the risks of sexually transmittable diseases (Gust et al., 2003), and inappropriate sexual behavior (Matson & Russell, 1994; McCurry et al., 1998). Gust et al., for instance, studied the occurrence of sexual abuse among clients of 115 state facilities; 67 of these facilities reported incidents of sexual abuse of their clients.

Fewer studies describe the sexuality of persons with intellectual disabilities in a positive or neutral way (Tepper, 2000). Chamberlain, Rauh, Passer, McGrath, and Burket (1984) showed that 87 female adolescents with mild intellectual disabilities had a similar degree of experiences with sexual intercourse as female adolescents in the general public, whereas persons with severe disabilities were less experienced. Chamberlain et al. focused only on experience with sexual intercourse, not on other types of sexual behavior, and paid relatively much attention to sexual abuse and contraception issues. Ousley and Mesibov (1991) sampled 20 persons with mild to moderate intellectual disabilities and found that sexuality played an important role in the lives of many people with intellectual disabilities. Their results also showed that there were significant differences between male and female participants. Males were more interested in sexuality than were females. Kaeser (1996) found that staff members of service-providing agencies in the United States estimated that many persons with intellectual disabilities are sexually active in one way or another.

Edmonson, McCombs, and Wish (1979) focused specifically on the sexual knowledge and attitudes of people with intellectual disabilities. They found a positive correlation between participants' IQ and their sexual knowledge, although other variables, such as living situation and gender, played a more significant role. They also reported rather negative attitudes towards various aspects of sexuality. Lunsy and Konstantareas (1998) explored the sexual attitudes of a small sample of persons with intellectual disabilities and found that they generally had more negative attitudes toward sexual activities than did people without disabilities, particularly with regard to homosexuality, masturbation, and pornography. Using the data from the same small sample, Konstantareas and Lunsy (1997) explored the relations between sexual knowledge, attitudes,

experience, and interests among people with intellectual disabilities. They found positive relations between these variables, with the exception of the relation between knowledge and attitudinal variables, which was negative. The researchers suggested that these negative attitudes may reflect internalized caregiver concerns about sexuality.

McCabe and Cummins (1996) investigated the sexual knowledge, experience, feelings, and needs of 30 people with mild intellectual disabilities. They found that their participants had significantly less sexual knowledge than a comparable student population. Regarding sexual behavior, 80% of the respondents had experience with kissing and 48% with sexual intercourse. In a more comprehensive study, McCabe (1999) investigated the sexual knowledge, feelings, experience, and needs of 60 people with mild intellectual disabilities compared to those of people with physical disability and people from the general population. She found that the participants with intellectual disabilities had less sexual knowledge and experience, more negative attitudes toward sexuality, and stronger sexual needs than did participants from the other two groups. This unfavorable combination of findings underlines the importance of further investigating sexuality and people with intellectual disabilities.

To summarize, the available research demonstrates that sexuality and romantic relationships may be important aspects for people with intellectual disabilities. There may be differences between males and females (males may be more sexually interested than females) and between people with mild and severe disabilities (people with mild intellectual disabilities may be more sexually active than are those with severe disabilities), but the empirical basis for these assumptions is limited. A remarkable observation in some of the studies is that the attitude of people with intellectual disabilities toward sexuality is rather negative, which may reflect the participants' own feelings but may also be caused by caregiver concerns or research bias. The insights about the relations between sexual knowledge, attitudes, experiences, and needs are limited to the results of one study (Konstantareas & Lunsy, 1997). It seems important to further explore the relationships between these variables.

The present study is intended to contribute to the existing knowledge about the sexuality and romantic relationships of people with intellectual disabilities in two ways. First, we confronted the aforementioned research with new descriptive data col-

lected in the Netherlands. In addition to the variables included in previous research, we included two forms of “impersonal” sexual activities in the questionnaire: watching adult movies and prostitution. The information on sexual experiences of people with intellectual disabilities could, furthermore, be compared to information about the general population in the Netherlands (Bos & Sandfort, 1998). Second, we used the data to analyze the relationships among sexual and relational needs, experiences, knowledge, and attitudes. In the general population, strong relations between knowledge, attitudes, and behavior are assumed (cf. Ajzen, 1991). We investigated whether such relations can also be found regarding the sexuality of people with intellectual disabilities and explored possible discrepancies.

Many of the available studies on the knowledge, attitudes, and behavior of people with intellectual disabilities are based on the estimations of proxies, such as caregivers in service-providing agencies. The methodological and communication challenge of an interview situation with respondents who have intellectual disabilities is then avoided by asking informants about the behaviors, attitudes, and knowledge of people with mental retardation. However, to date research has shown that such proxies' reports may be biased (Todorov & Kirchner, 2000). Furthermore, the awareness has grown that people with intellectual disabilities can often speak for themselves in behavioral research (Freedman, 2001). We, therefore, decided to collect data on romantic relationships and sexuality in a sample of respondents with intellectual disabilities.

Method

Structured interviews were held with 76 persons who had intellectual disabilities. During the interviews, additional observational data were collected, focusing on the respondents' comprehension of the questions asked and on their feelings of discomfort.

Institutional Context

Respondents were selected from the service-providing agency Aveleijn in the Netherlands. This organization offers support to 900 clients with various levels of mental retardation. The clients live either in small communal units or individual apartments, both under the supervision of Aveleijn consultants. They participate in society either by shel-

tered employment or by daily activities provided by Aveleijn make use of all regular services, such as shopping centers, post offices, and health care. Their living situation can, thus, be characterized as supported living in the community. Regarding sexuality and romantic relationships issues, Aveleijn has the policy not to constrain its clients more than necessary based on the nature and severity of their handicap. Clients have, in principle, the same legal access to adult movies and prostitutes that the rest of the Dutch population has. In order to avoid abuse and exploitation, Aveleijn has agreements with several escort services in the region.

Respondents

An initial selection of possible respondents was based on three criteria: (a) age of 18 years or older; (b) participation would not be harmful to them (e.g., because of a known history of sexual abuse); and (c) sufficient cognitive skills, sight, and hearing to take part in the interviews. The initial selection was made by staff members of Aveleijn, who were advised by a psychologist. This resulted in 325 people who were considered to be capable of participating in the study.

Of these 325 people, we randomly chose 190 clients to participate. After more consideration, staff members of Aveleijn withdrew 17 clients from this sample. The remaining group of clients selected were informed about the study and asked to participate; 73 declined. The guardians of the clients (mostly family members) were also informed about the study and given the opportunity to withdraw clients from participating; 17 guardians decided to do so. During the interview weeks, 7 clients who were initially willing to take part in the research could not participate for various practical reasons. Eventually, our sample was 76 people (40% of the original sample). Of the respondents, 47 (62%) were male and 29 (38%), female. Eighteen participants were less than 30 years old, 40 participants were between 30 and 50 years, and 18 participants were older than 50. According to the criteria of the American Psychiatric Association (1994), respondents had mild intellectual disabilities (IQ: 50/55–70); 4, moderate intellectual disabilities (IQ: 35/40–50/55); and 11 respondents took a middle position between mild and moderate intellectual disability. The degree of intellectual disabilities of 5 individuals was not known.

Questionnaire

In designing our interview questionnaire, we had four major concerns, based on previous experiences and methodological research (Finlay & Lyons, 2001, 2002; Mattika & Vesala, 1997). First, it was important to develop questions that were easy to understand. We formulated our questions as simply and straightforward as possible and offered the interviewers a list of synonyms that could be used in the case of comprehension problems. Second, we were aware that an oral interview would place high demands on the respondents' memory; therefore, we also presented the questions on separate cards, where possible with visual cues (i.e., drawings or pictograms representing the sexual activity concerned and pictograms supporting the answering possibilities (see Figure 1). Third, because *acquiescence* (the tendency to answer a question affirmatively regardless of its content) is considered to be an important threat to the validity of research among respondents with intellectual disabilities, we included a "don't know" option in all answering possibilities. Fourth, there were serious constraints regarding the number of questions that could be asked in an interview of at most 30 minutes, which we considered to be the maximum for respondents

with intellectual disabilities. Therefore, one of the biggest challenges we faced was to measure all relevant constructs with sufficiently reliable scales. In this respect, we took a different approach than did McCabe, Cummins, and Deeks (1999), who developed a far more comprehensive instrument, consisting of 248 questions, which took several hours to administer (in three separate interview sessions).

The resulting questionnaire consisted of 28 questions covering four topics: sexual knowledge, sexual attitudes, sexual and relational experience, and sexual and relational needs. All topics (except for the knowledge questions) comprised the same sexual activities: kissing, hugging, sexual intercourse, masturbation, watching adult movies, and visiting a prostitute. Two versions of the questionnaire were made: one for male and one for female participants. A few sample items of the questionnaire may be found in Figure 1.

Four questions were asked about sexual knowledge. Two yes/no questions concerned the possible consequences of sexual intercourse (pregnancy and sexually transmitted diseases—STDs). Two open-ended questions focused on the respondent's knowledge of condoms (what is shown on this picture?) and masturbation (what is happening on this picture?). We computed a total knowledge score counting the number of correct answers.

Nine questions were asked about sexual attitudes. The questions about kissing, hugging, and sexual intercourse were asked in a heterosexual and a homosexual context. The response options represented a 5-point scale: very good, good, neutral, not good, and not good at all. The scale values were visually supported by *emoticons* (see Figure 1). Each question had a don't know option, visualized by a question mark.

Regarding sexual and relational experience, we asked seven questions, including the six sexual topics mentioned above and an additional question about relational experience (having a boyfriend or girlfriend). An example of such an experience question is: Have you ever kissed someone on the lips? The response options were yes, no, and don't know. These were visualized by, respectively, a thumb up and thumb down pictogram, and a question mark.

Eight questions were asked about sexual and relational needs, seven of which corresponded to the topics addressed in the experience questions (with the same answering format). An example of such a needs question is: Would you like to watch adult movies? In addition, a question was asked

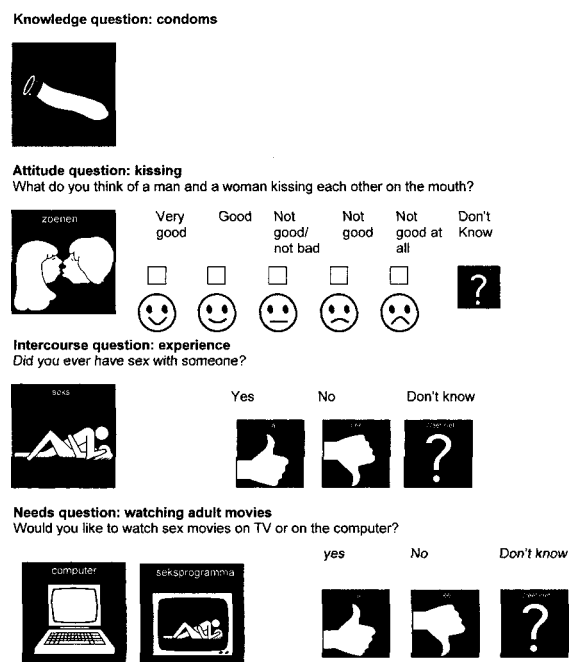


Figure 1 Sample questions from the questionnaire.

about the kinds of things the respondents would like to do if they had a relationship with someone. The respondents could choose from a list of possible activities, but could also come up with other possibilities. For reasons of conciseness, the questions about masturbation, watching adult movies, and visiting a prostitute were only asked if the respondent did not have prior experience with these activities. We consequently assumed that respondents who masturbated, watched adult movies, or visited a prostitute from time to time still felt the need to do so.

Procedure

The interviews were carried out by 10 female employees of the service-providing agency, who were trained to follow a strict interview protocol. For practical reasons, we were not able to assign same-gender interviewers to all participants. We, therefore, chose to create a stable research design for all participants by recruiting and training only female interviewers. All interviewers had ample experience working with persons who have intellectual disabilities. The interviewers were not assigned to respondents from their own units.

After a short explanation of the purpose of the study, the respondents were asked whether they wanted their personal companion from the service-providing agency to be present during the interview session. They could decide for themselves whether the presence of their companion would make them feel more comfortable or would be threatening to them. In 60 of the 76 interview sessions, the respondents wanted their personal companion to be present. If personal companions were present during the interviews, they were permitted to reassure the respondent if necessary but were not allowed to intervene in the interview process. They were instead given an observation task (see below).

At the onset of the interview, the respondents were told that they did not have to answer questions they preferred not to answer. The questions were then read to them one at a time, supported by the visual cues on separate cards if possible. The respondents could answer the questions either by saying their answer or by pointing it out on the question card. The interview sessions lasted, on average, 25 minutes.

Observation Data

In addition to the questionnaire results, we collected observational data. The interviewer and the

personal companion (if present) observed the respondent for each question to determine whether the respondent (a) understood the questions and (b) expressed any discomfort when answering. We had two reasons for collecting these data. The first was to verify whether our instrument was a valid approach for researching sexuality among people with intellectual disabilities. The second reason was that these observations had the potential of becoming additional variables in the research. If the personal companion and the interviewer generated reliable observations, two additional variables could be added. We expected some degree of similarity between the percentage of correctly understood interview items, and the respondents' score on the sexual knowledge questions as well as some similarity between the respondents' feelings of discomfort and their attitudes toward sexuality.

Results

We first address the issues of scale construction as a prerequisite for analyzing the questionnaire data and then interobserver reliability as a first step toward using the observation data. The observation data also shed light on the quality of our instrument. After that, the sexual knowledge, attitudes, sexual and relational experiences, and sexual and relational needs are discussed and the relations between these constructs explored.

Questionnaire Data: Scale Construction

The four sexual knowledge questions appeared to form a sufficiently reliable scale, Cronbach's $\alpha = .69$. Based on the number of knowledge questions correctly answered, a knowledge score for each participant was computed, with values ranging from 0 to 4.

To analyze the structure of the sexual attitude questions, we conducted a principal component factor analysis with varimax rotation (with eigenvalues higher than 1). Items were assigned to a factor if the factor loading was .40 or higher and if the factor loading on other factors was lower than .40. This resulted in an unambiguous three-factor solution, accounting for 72% of the variance. The first factor (Attitude Homosexuality) consisted of the three questions about homosexual kissing, hugging, and intercourse. These three questions formed a reliable scale, Cronbach's $\alpha = .88$. The second factor (Attitude Impersonal Sexual Activities) consisted of questions about masturbation, watching adult mov-

ies, and visiting a prostitute. Again, these questions formed a reliable scale, Cronbach's $\alpha = .75$. The third factor consisted of questions about heterosexual kissing, hugging, and intercourse. These three questions, however, did not form a reliable scale and had to be analyzed on the item-level.

The same procedure was followed for the experience and needs questions. For the questions about sexual experience, the factor analysis resulted in a two-factor solution, accounting for 64% of the variance. The first factor (Intimacy Experience) consisted of three questions about kissing, hugging, and having a boy- or girlfriend. These questions formed a reliable scale, Cronbach's $\alpha = .91$. The second factor (Sexual Experience) consisted of four questions about sexual intercourse, masturbation, watching adult movies, and visiting a prostitute. These questions formed a sufficiently reliable scale, Cronbach's $\alpha = .61$. For the two resulting variables, we calculated a sum score of the number of activities the respondents had experience with.

For the questions about sexual needs, a three-factor solution was found, accounting for 71% of the variance. The first factor (Conventional Sexual Needs) comprised the needs questions regarding kissing, sexual intercourse, and masturbation, Cronbach's $\alpha = .67$. The second factor (Relational Needs) consisted of the needs questions about hugging and having a boy- or girlfriend, Cronbach's $\alpha = .77$. The third factor (Needs for Sexual Stimuli) consisted of the needs questions about watching adult movies and visiting a prostitute, Cronbach's $\alpha = .62$. For each resulting variable, we computed a sum score.

Observation Data: Interobserver Reliability and Quality of the Instrument

The observations about respondents' understanding of the questions led to a reliable overall measure. The interviewers and observers (if present) had substantial agreement in their estimations of whether or not respondents understood the various questions correctly (with an average Cohen's κ of .63). Both for the interviewers and the observers, we computed a sum score per participant, reflecting the number of questions without comprehension problems. The single measure intraclass correlation between them was .94. Therefore, the respondents' observed level of understanding could be used as an extra variable in this study (observation of understanding). We decided to use the interviewers' observation as the variable of interest because not all

personal companions were allowed to attend the interview sessions.

The observations about expressions of respondent's discomfort when answering questions, however, did not lead to a reliable measure, average Cohen's $\kappa = .18$. The lack of agreement also applies to the level of sum scores per participant. The single measure intraclass correlation between interviewers and observers was only .44; therefore, we decided not to include these observation data as an extra variable in this study.

In general, the observation data demonstrated that the respondents had only a few comprehension problems with the questions asked. On average, the respondents had, according to their interviewers, comprehension problems with 1.5 of the 28 questions. The majority of the respondents (72%) had no problem with any of the questions. On the problematic side, however, one participant appeared to have comprehension problems with 23 of the 28 questions and had to be removed from the dataset. In the remaining data set, the number of comprehension problems ranged from 12 to 0. The questions that caused most comprehension problems concerned the respondents' attitude towards prostitution and their knowledge about possibly getting an STD after sexual intercourse (correctly understood by, respectively, 88% and 79% of the respondents).

Because of the low degree of agreement between interviewer and observer regarding the feelings of discomfort respondents had during the interview, these observation data must be viewed with caution. There was a significant difference between the interviewers and the observers: The observers noticed significantly more problems in this respect than did the interviewers (1.6 vs. 0.7 questions on average), paired $t(59) = 3.51, p < .005$. This may be attributed to the observers' empathy with the respondents (as a personal companion, they knew the respondent for some time) and to the more restricted task they had during the interview (observation only vs. observation, asking questions, and writing down answers). Despite the lack of agreement between the interviewer and the observer, both observations led to the conclusion that the interview did not cause many noticeable feelings of discomfort in the respondents. The questions that caused most expressions of discomfort concerned the respondents' attitude toward homosexual kissing and their experience with masturbation.

In all, the observation data confirmed the use-

Table 1 Sexual Attitude Scores of Respondents With Intellectual Disabilities

Attitude toward	All respondents		Men (n = 47)		Women (n = 28)	
	Mean	SD	Mean	SD	Mean	SD
Heterosexual kissing	4.19	0.76	4.19	0.80	4.20	0.71
Heterosexual hugging	4.19	0.73	4.21	0.78	4.15	0.66
Heterosexual intercourse	3.84	0.94	3.75	1.06	4.00	0.66
Homosexuality	2.65	1.10	2.73	1.15	2.51	1.03
Impersonal sexual activities*	3.28	1.00	3.55	0.92	2.84	0.98

Note. Mean scores on a 5-point scale (1 = negative, 5 = positive).

*Significant difference between male and female respondents, $p < .005$.

fulness of the instrument we developed and used, helped us identify one respondent with too many comprehension problems during the interview, and led to one extra variable that we included in our analysis of the relations between constructs.

Sexual Knowledge

On the 4-item knowledge scale, the respondents had an average score of 2.44 ($SD = 1.21$). The respondents obviously had some knowledge about sexuality issues, but their knowledge was far from exhaustive, and there were considerable individual differences. No significant differences between gender and age groups were found. The knowledge level of the respondents varied per question. Most respondents (93%) knew that women may become pregnant after having sexual intercourse with a man. Somewhat fewer respondents (76%) knew about the risks of getting an STD after having sex. Only 59% of the respondents recognized the picture of a condom, and even fewer respondents (51%) noticed that the person on the drawing presented to them was masturbating.

Sexual Attitudes

The results on the questions about sexual attitudes are presented in Table 1. The respondents had a clearly positive attitude toward heterosexual kissing, hugging, and sexual intercourse. They had, on average, an almost neutral attitude toward the “impersonal” sexual activities (masturbation, adult movies, and prostitution), and a somewhat less accepting attitude regarding homosexuality. No significant differences regarding attitudes were found between the three age groups. There was only one significant gender difference: Men had a considerably more positive attitude regarding impersonal

sexual activities than did women, $t(73) = 3.17, p < .005$; Cohen’s $d = .74$.

Sexual and Relational Experience

Table 2 provides an overview of the respondents’ sexual and relational experience, both at the level of the two constructs we formed and at the level of individual aspects. At the construct level, the mean proportion of, respectively, intimacy and sexual experiences of the respondents is given. If a

Table 2 Sexual Experience of Respondents With Intellectual Disabilities

Experience ^a	All respondents	Men	Women
	Mean/%	Mean/%	Mean/%
Mean intimacy	.76	.74	.80
Kissing	76	74	79
Hugging	74	70	81
Having a boy(girl) friend	80	79	82
Mean sexual*	.45	.54	.30
Intercourse	51	46	62
Masturbation*	57	70	32
Watching adult movies*	59	72	37
Visiting a prostitute*	20	32	0

Note. Overall scores = mean proportion of underlying aspects respondents had experience with. $Ns = 47$ for men and 28 for women.

^aThe indented experiences are percentages.

*Significant difference between male and female respondents, $p < .005$.

respondent, for example, reported to have experience with two of the three intimacy aspects mentioned, he or she was given a score of .67. In general, the respondents appeared to have less sexual experience than intimacy experience. All aspects of intimacy experience appeared to be quite common among the respondents. Regarding sexual experiences, a distinction must be made between three more or less common activities (sexual intercourse, masturbation, and watching adult movies) and the considerably less prominent activity of visiting a prostitute.

No significant differences between male and female participants were found regarding the intimacy experience construct and its underlying aspects. On the sexual experience construct, however, a significant difference between men and women was found: Men reported considerably more types of sexual experience than did women, $t(73) = 3.37, p < .005$, Cohen's $d = .79$. This difference cannot be ascribed to the respondents' experience with sexual intercourse, but is reflected in experience with masturbation, $\chi^2(1, N = 75) = 9.72, p < .005$, watching adult movies, $\chi^2(1, N = 75) = 8.87, p < .005$, and visiting a prostitute, $\chi^2(1, N = 75) = 9.98, p < .005$. Particularly with such impersonal sexual activities, men reported considerably more experience than did women.

The respondents' age groups did not correspond to significant differences regarding the two overall experience constructs. At the item level, only one remarkable result was found: There was a significant difference in experience with masturbation between the three age groups, $\chi^2(2, N = 75) = 6.79, p < .05$. Respondents in the age range of 30 to 50 years had the most experience with masturbation (70%), followed by the respondents older than 50 (53%). Respondents younger than 30 years old had considerably less experience with masturbation (33%).

Sexual and Relational Needs

In Table 3, the results regarding the sexual needs of the respondents are reported, again focused both on the overall constructs and on their underlying aspects. The respondents reported many conventional sexual needs (kissing, intercourse, and masturbation) and even more relational needs (hugging and having a boy- or girlfriend). Needs for sexual stimuli were less prominent, although there was a considerable difference between the two aspects it comprises: the need to watch adult movies had scores similar to those for the activities under

Table 3 Sexual and Relational Needs of Respondents With Intellectual Disabilities

Needs ^a	All re-	Men	Women
	spondents Mean/%	Mean/%	Mean/%
Mean conventional sexual	.71	.76	.62
Kissing	86	91	76
Sexual intercourse	68	67	70
Masturbation*	58	70	36
Mean relational	.87	.86	.88
Hugging	85	85	85
Having a boy(girl) friend	89	89	88
Mean sexual stimuli*	.47	.58	.26
Watching adult movies*	66	77	48
Visiting a prostitute*	28	40	4

Note. Overall scores = mean proportion of different underlying needs reported. *Ns* = 47 for men, 28 women. The indented columns are all percentages.

^aThe indented needs are percentages.

*Significant difference ($p < .05$) between male and female respondents.

the other two constructs, whereas the need to visit a prostitute is clearly less prominent.

At the level of constructs, there was only one significant difference between male and female respondents: Men reported considerably more needs for sexual stimuli than did women, $t(66) = 3.36, p < .005$, Cohen's $\alpha = .83$. Male respondents reported significantly more needs than did female respondents to watch adult videos, $\chi^2(1, N = 75) = 6.20, p < .05$, and to visit a prostitute, $\chi^2(1, N = 75) = 10.07, p < .05$. Within the construct of conventional sexual needs, there was also one significant difference in needs: Men had more needs to masturbate than did women, $\chi^2(1, N = 75) = 7.48, p < .05$. Regarding the three age groups, no significant differences were found.

In a separate question, we further explored the respondents' relational needs by asking them what kinds of things they would like to do with their boy- or girlfriend. Hugging, kissing, and sexual intercourse were prominent activities mentioned by the respondents (66%, 62%, and 57%, respectively),

but also many nonsexual, social activities were mentioned, such as shopping (64%), going for a walk (63%), or going to a discotheque (22%).

Correlations Between Variables

Table 4 shows the correlations between the variables included in this study. The correlations between sexual experience and two types of sexual needs are not included because the needs questions about impersonal sexual activities (masturbation, watching adult videos, and prostitution) were only asked if respondents did not have experience with them. We first discuss the relations within the four overall constructs (knowledge, attitude, experience, and needs) and then explore the relations between these constructs.

First, a positive correlation was found between the respondents' sexual knowledge and their observed understanding of the interview questions. This may be considered to be an extra indication of the validity of the knowledge questions asked. Among the five sexual attitude variables, relatively few significant correlations were found, indicating that respondents had different combinations of attitudes toward the various aspects of sexuality. Weak positive correlations were found between the attitudes toward heterosexual intercourse, homosexuality, and impersonal sexual activities. The respondents' attitude toward heterosexual hugging did not correlate with any of the other attitude variables, and their attitude toward heterosexual kissing correlated only weakly with that toward heterosexual intercourse. The two experience variables also correlated only weakly, suggesting that there may be a relation between the respondents' needs for intimate relationships and their sexual desires, but that the two aspects may also be independent of each other. A similar conclusion may be drawn for the three needs variables. The strongest relationship was found between conventional sexual needs and needs for sexual stimuli. Relational needs correlated only weakly with the two types of sexual needs.

An analysis of the relations between the four constructs shows that many of the assumptions we have about knowledge, attitudes, and intended behavior of the general population are also valid for the respondents with intellectual disabilities. First, a positive relationship was found between sexual knowledge and attitude toward heterosexual intercourse. Knowing more about sexuality corresponded with a more positive attitude. Second, there were positive relations between the sexual attitudes of

Table 4 Correlations Between Knowledge, Attitude, Experience, and Needs Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Knowledge	—	.52*	.06	.10	.37*	.22	.16	.32*	.18	.32*	.23	-.04
2. Observation of understanding		—	.07	.13	.31*	.15	.18	.38*	.18	.16	.23	-.09
3. Attitude heterosexual kissing			—	.16	.29*	.06	.14	.00	.04	.35*	.06	.04
4. Attitude heterosexual hugging				—	.24	.03	.12	.33*	.27*	.22	.31*	.17
5. Attitude heterosexual intercourse					—	.25*	.33*	.20	.31*	.50*	.09	.06
6. Attitude homosexuality						—	.38*	-.08	.10	.26	.18	.07
7. Attitude impersonal sexual activities							—	.06	.56*	.56*	.14	.54*
8. Intimacy experience								—	.33*	.16	.41*	.08
9. Sexual experience									—	n/a	.32*	n/a
10. Conventional sexual needs										—	.33*	.40*
11. Relational needs											—	.26*
12. Needs for sexual stimuli												—

*p < .05

respondents and their sexual experience and needs. The respondents' attitude toward heterosexual intercourse, for one, correlated weakly with their sexual experience and somewhat stronger with their conventional sexual needs. The respondents' attitude toward impersonal sexual activities correlated rather strongly with their sexual experience, their conventional sexual needs, and their desires for sexual stimuli. Third, a correlation was found between respondents' intimacy experience and their relational needs.

In three stepwise regression analyses, we explored to what extent the sexual and relational needs of respondents may be explained by relevant knowledge, attitude, and experience variables; therefore, we used all knowledge, attitude, and experience variables with a significant correlation as independent variables in the regression analyses. The respondents' conventional sexual needs could be explained quite well, adjusted $R^2 = .41$, by two attitudinal variables: attitude toward heterosexual intercourse, $\beta = .41$, and impersonal sexual activities, $\beta = .40$. The respondents' relational needs could not be explained very well by the other variables, adjusted $R^2 = .12$; only intimacy experience served to explain this need, $\beta = .36$. The respondents' needs for sexual stimuli could be explained reasonably, adjusted $R^2 = .29$, by only one variable: their attitude toward impersonal sexual activities, $\beta = .54$.

Discussion

Several conclusions may be drawn from this study. An important conclusion concerns the research instrument we developed and used. Our interview questionnaire appeared to be a useful instrument to explore the sexual knowledge, attitudes, experiences, and needs of respondents with mild to moderate intellectual disabilities. The observation data collected during the interviews confirmed that the questions were generally understandable for the respondents. In addition, there were several meaningful patterns to be distinguished in the data collected.

The results of this study confirm that romantic relationships and sexuality are important issues in the lives of people with intellectual disabilities. Our respondents appeared to already have considerable experience with many facets of romantic relationships and sexuality, and they also appeared to have many needs for relationships and sexual activities.

These results confirm the findings in earlier studies. McCabe and Cummins (1996) found that 80% of the participants with intellectual disabilities had kissing experience, and 48% had had sexual intercourse. McCabe (1999) found that 78% had experience with kissing on the lips and 58%, with intercourse. In the present study we found similar percentages: 75% had experience with kissing on the lips and 51%, with sexual intercourse. Due to an incompatibility of the data collected in our study and the results of national surveys in the Netherlands on sexuality, a comparison with the general public is only possible for the participants' experience with sexual intercourse. The percentage of participants who had experience with sexual intercourse was considerably lower than that of the Dutch general public: 46% versus 95% for male respondents; 62% versus 96% for female respondents (Bos & Sandfort, 1998).

The respondents' age categories did not systematically affect their knowledge, attitudes, experiences, and needs. Regarding gender, however, some consistent differences were found. In general, male respondents reported more sexual needs and experiences than did female participants, particularly regarding the impersonal sexual activities (masturbation, watching adult movies, and prostitution). Their attitude toward these activities was also more positive. These differences between male and female participants confirm earlier findings among people with intellectual disabilities (Ousley & Mesibov, 1991) and reflect similar findings among the Dutch general public (Bos & Sandfort, 1998).

Our exploration of the relationships between constructs showed that some of the basic assumptions that are made in behavioral research among people from the general public also apply to respondents with intellectual disabilities. We found several positive relations between variables that could be expected on the basis of existing behavioral models (a) between sexual knowledge and attitudes and (b) between attitudes and experiences or needs. That is, people with more sexual knowledge have more positive attitudes, and people with more positive attitudes have more experiences and have more needs. More or less rational behavioral models, such as the theory of planned behavior (cf. Ajzen, 1991), appear to be applicable among respondents with intellectual disabilities as well. Proponents of this theory assume that people's behavior may be predicted by their behavioral intentions, which in turn are predicted by their attitudes to-

ward the behavior, the subjective norm, and their perceived behavioral control.

The needs for relationships and sexual expression do not seem to be strongly connected. Many respondents are in search of a close friend, a soul mate, without the immediate desire to start a sexual relationship. Further, many respondents felt the need to express themselves sexually without the wish to do so in a steady relationship. Supporting persons with intellectual disabilities in relational and sexual issues should, in our view, start with individualized indications of their needs, without any prior assumptions about possible combinations of relational and sexual desires.

The sexual knowledge of persons with intellectual disabilities remains a major concern, not only because many respondents appeared to be lacking essential knowledge about sexuality, but also because there was no significant correlation between sexual knowledge and sexual experience. Persons who are sexually active do not necessarily know more about relevant sex-related issues than do persons who are not sexually active. Service-providing agencies must, therefore, continue educating and informing persons with intellectual disabilities about the aspects of sexuality that are or may be relevant to them. The development of educational materials tailored to individual information needs may be an important first step. Educational activities should be geared to the specific needs and experiences of individuals.

It is important that educational programs are not limited to knowledge alone, but also address the attitude, experiences, and needs of people with intellectual disabilities. Based on the findings reported in this article, Aveleijn is developing an integrative behavioral training program that involves “the mind, heart, and hands” (knowledge, attitudes, and behavior) of participants.

In addition to such educational activities, service-providing agencies should, in our view, develop an integrative policy comprising the various aspects of romantic relationships and sexuality. Such a policy should, to some extent, regulate but primarily facilitate the ways clients try to explore their sexual needs and their search of romantic and valuable relationships.

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