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Using the new board game SeCZ TaLK to stimulate the communication on sexual health for adolescents with chronic conditions

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ABSTRACT

Objective: This study evaluated the feasibility and appreciation of a new educational board game (SeCZ TaLK) that stimulates communication on sexuality and intimate relationships in youth with chronic conditions.
Methods: 85 adolescents with chronic conditions or disabilities piloted the board game in three rehabilitation centers/schools for the disabled, one outpatient clinic and a patient organization. They assessed their experiences through a brief questionnaire, as did 12 health care professionals and teachers who acted as facilitators.
Results: Eighty-five percent of the adolescents found it is (very) important to discuss sexuality and intimate relationships; 81% felt that SeCZ TaLK enabled this. Girls were more positive about the game than boys ($p < .05$) and younger participants were more positive than older ones ($p < .01$). Youth in an outpatient clinic appreciated the game most ($p < .05$) compared to other settings. Professionals asserted that discussing these issues is important for their work and would recommend the game to colleagues.
Conclusion: SeCZ TaLK is a promising tool for improving communication on sexuality with youth with special health care needs.
Practice implications: Health care providers and teachers are recommended to use interventions such as SeCZ TaLK to stimulate communication about sexual health with adolescents with chronic conditions.

1. Introduction

Healthy sexuality is an important aspect of a person's well-being and quality of life. Persons with disabilities have the same sexual and reproductive health needs as other people. Yet they often face barriers to information and services. Lack of information and communication materials, as well as health-care providers' negative attitudes and lack of knowledge and skills are of greater consequence than the disabilities themselves, says the 2009 WHO/UNFPA guidance note [1]. As the development of sexuality and intimate relations is an all-important task in adolescence, sexual and reproductive health issues are a major area for those working with adolescents suffering from chronic conditions and disabilities toward transition to adulthood and adult services [2,3]. Sexual health is important for many reasons, not least to develop a positive sexual identity with consideration of physical limitations, heredity, pubertal effects, or teratogenicity.

Psychosexual development is often negatively affected by chronic conditions. There are indications that adolescents with chronic conditions and disabilities have more sexual problems [4–7] and are less satisfied with their sex life than healthy peers [8]. Adolescents with spina bifida and cystic fibrosis reported they were not well informed about general and disease-specific issues of sexual health [9–11]. Furthermore, compared to healthy peers, adolescents with chronic conditions often are slow in developing sexual relations [12,13]. This does not imply that they do not engage in sexual activity or in risk behaviors such as having unprotected sex. Some research has even indicated that they may show the same risk behavior as their healthy peers [14–16], although other research has not always confirmed this [12].

1.1. Communication about sexual health in health care settings

Discussing sexual health issues is part of good health care [2,3] and should be an educational mission for those involved in adolescent health [17]. Health care providers and special education teachers could be expected to provide education, support and counseling concerning the effects of the chronic condition on sexuality and romantic relationships. Understanding the implica-

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tions of a chronic illness and/or disability for sexual and reproductive health is considered a key aspect of transitional care [18,19]. Unfortunately, professionals have reservations to discuss sex with patients [20–24]. Non-medical issues, including sexual health, are rarely addressed during medical consultations with adolescents with chronic conditions [9–10,25–26]. Sawin et al. reported that 29% of adolescents with spina bifida had never discussed sexuality in relation to their condition [27]; while in another study only 39% of youth with spina bifida and 30% of their parents reported they had ever discussed aspects of sexuality with a doctor [9]. In a Dutch survey, half of 1039 adolescents with various chronic conditions (12–19 years) stated it was important to discuss fertility and sexuality issues in relation to the chronic condition, but 79% of all claimed these had never been covered [28]. Over three quarters of 159 surveyed health care providers in Dutch rehabilitation centers and hospitals claimed that discussing sexuality was important to their adolescent's health care practice. They also were aware that they needed to improve on this [29].

1.2. Educational games for sexual health

Several authors argue that more attention to sexual and reproductive health issues is needed in adolescent health care [25,30]. Seeing that specific tools or interventions to facilitate communication about sexual health targeted at youth with chronic conditions were not available in the Netherlands, we developed a new intervention. We opted for an educational board game because this may be more advantageous than one-way forms of health education. Games are adaptable, stimulate interaction between group participants and are fun to play, and are regarded as tools to motivate and support learning. Compared to serious computer games they are inexpensive and adaptable. One of the benefits of group play is that interaction is easily stimulated between participants. Adolescents can learn from each other through group discussions and communicative role-playing tasks [31]. Some studies report that playing games increases knowledge on health topics [32–34]. There is some evidence that playing educational board games also improves self-efficacy. Lennon and Coombs compared the effects of two modes of health education (lectures and an educational board game) in a Filipino school population. Playing the board game led to a significant increase in self-efficacy, but lecturing was more effective in increasing knowledge. Self-efficacy was measured by a questionnaire. Adolescents showed more confidence in performing tasks related to dengue fever control measures [35].

1.3. Research questions

Aim of the study is to evaluate the feasibility and appreciation of this newly developed board game called SeCZ TaLK; both in youth with chronic conditions and in professionals from different health care settings/schools for the disabled. SeCZ is a Dutch acronym for Sexuality and Chronic Conditions.

2. Methods

2.1. Recruitment and participants

From a database of healthcare professionals and teachers in special schools, approximately 100 professionals were invited to test the board game in their institutions. A descriptive, cross-sectional design was applied. Five organizations were enrolled in the study: three special schools for secondary education for the disabled (these schools are often affiliated with rehabilitation centers), one outpatient department of a university hospital and one patient organization for neuromuscular diseases. Two other hospitals were willing to participate but could not make the arrangements on time.

2.2. Procedure

We offered the participating organizations the services of a facilitator, a health educationalist also trained as drama teacher. In two of the three schools and the patient organization, this facilitator played the game with the adolescents. In the other two organizations, professionals facilitated the game themselves. Both were experts in the project group that developed the game: the health psychologist in the third school and the nurse specialist in the HIV outpatient clinic. In all settings, the game was played several times, in different groups. After each session, short self-report questionnaires were administered to participating adolescents and professionals.

Adolescents volunteered to participate after receiving written information materials and gave their informed consent.

2.3. Intervention SeCZ TaLK

The intervention tested is SeCZ TaLK: a newly developed educational board game that addresses a broad range of issues surrounding sexual health issues and uses questions and communicative tasks (Fig. 1). A team of nine experts on sexuality or health care, including sexologists, adolescent health care providers, and expert patients and researchers, together with sixteen adolescents with chronic conditions developed a prototype through a participatory development approach. In two expert meetings they selected the topics and developed the items. The following guiding principles were adhered to. The intervention had to be educational, playful, gender sensitive, respectful of cultural differences and sexual preferences, demonstrating a positive attitude toward sexuality, while also addressing risk behaviors and dangers of sexual abuse. Last but not least, it had to address sexual health issues related to chronic conditions. Adolescents with different chronic conditions often face the same barriers or challenges [3]. Many items or questions in the game pertain to all, irrespective of special health care needs. For example: *When do you tell a friend you have a disease? Is going out for you the same as for a healthy person? How and where do you meet other people? Have you ever asked your doctor about heredity, fertility, pregnancy, physical limitations, or contraceptives?* Few items are disease-specific, but these issues may easily come up after general questions. Sometimes general symptoms are mentioned (such as tiredness, pain or incontinence) and items may contain case descriptions like '*Image the following situation: you are at the mall in your wheelchair and some people start making silly jokes, what would you do or what would you say?*'.

The game was developed to be played by small groups (3–8 participants) of adolescents between 12 and 25 years in schools and in health care settings. It can be played by mixed groups of boys and girls. A facilitator is always present. The game comprises of a playing board, counters, dice, chips, action cards saying 'yes', 'no' and 'blush', respectively, and 66 playing cards with 264 printed items regarding four domains: Sexuality, Relationships, Your body, and the Future. From start position, players move forward on the board by rolling a dice showing how many steps to take. Depending on what symbol one's counter lands on, a playing card from one of three different decks should be taken: Knowledge, Attitudes or Behavior. The cards offer three types of items: propositions, open questions and role-playing items. Propositions and open questions are either opinion questions (covering attitude) or questions about facts (knowledge). Behavior is especially covered by the role-playing items.

Fig. 1. The board game SeCZ TaLK.

- Participants are invited to respond to propositions by using any of the 'yes', 'no' or 'blush' action cards. Examples: "*I talk with my parents about sex*", "*It's okay for me to have a relationship with a disabled person or a person with a disease*".
- Open questions for one participant. Discussion with other participants may follow afterwards. Examples: "*Mention four physical changes in girls' puberty*", "*Imagine that you and your friend want to have sex but you are physically exhausted. What do you do?*", "*Which part of your body do you find beautiful?*"
- Role-playing. Examples: "*Play: someone promises you expensive gifts when you come with him/her to his house. What do you do and what would you say?*", "*Play: you notice an attractive person in a café. What do you do or what would you say?*", "*Play: ask your doctor if it's possible for you to have sex and to have children*".

The 'blush card' gives participants the opportunity to skip their turn when they should feel too shy to answer. Participation, however, is encouraged and answering questions and participating in role playing assignments is therefore rewarded by chips. The duration of the game is 1–2 h depending on the number of participants and the amount of chips distributed by the facilitator.

SeCZ TaLK should be played under supervision of a teacher, health care provider, psychologist or social worker. The professional acts as facilitator and ensures that participants listen to one another, exercise discretion, and do not laugh at others' answers. The game was developed to be self-explanatory, so that facilitators need not be trained specifically. An extensive manual provides play instructions and answers to all questions including references to relevant websites and other resources. Furthermore, a Quick Start Card is available. In the research, we assessed whether professionals deemed additional training necessary.

2.4. Measures

Two different questionnaires were developed assessing general attitudes, the appreciation and feasibility of the game: one for the youth, one for the professionals involved. Both consisted of general questions and items using a 5-point Likert response format (1 = strongly disagree, 2 = mildly disagree, 3 = not agree or disagree, 4 = mildly agree, 5 = strongly agree). For further details, see the later presented Table 2.

The Youth SeCZ TaLK Evaluation Questionnaire consisted of two general items and an appreciation scale. The first item addressed the importance of talking about sexuality and relationships in general ('*I find it important to be able to discuss sexuality and relationships.*'), the second assessed the experienced opportunity to express opinions in the group during the game ('*I felt free to express my opinion during the game session.*').

The Appreciation Scale consisted of seven items (theoretical range from 7 to 35), such as: '*I liked to play the game*'; '*The game helps to talk about sex and relationships*'. The setting and the player's age and gender were informed after as well.

The Professional SeCZ TaLK Evaluation Questionnaire consisted of three general statements ('*Discussing relationships and sexuality is necessary for the adolescents I work with*', '*For adolescents with chronic conditions/disabilities sufficient attention is being paid to relationships and sexuality*' and '*I can facilitate the game without an additional training*') and a Feasibility Scale of four items (theoretical range from 4 to 20) on the feasibility of the game, such as: '*The board game SeCZ TaLK is useful within my organization*', and '*This game is useful and instructive for the adolescents I work with*'. Data on setting, gender and profession were also recorded.

2.5. Data analysis

Mean scores on the general items of the Youth SeCZ TaLK Evaluation Questionnaire and the Appreciation Scale were compared between boys and girls, between three age groups (<15, 15–18, >18) and between three settings with different patient groups (special school, outpatient clinic, patient organization). The reliability of the Appreciation Scale was good (Cronbach's $\alpha = .81$). A principal component analysis was conducted on the seven items of the Appreciation Scale and showed that only one component had an eigenvalue over Kaiser's criterion of 1 and explained 48.9% of the variance. All items had factor loadings of .49 or higher. We used descriptive statistics and one-way ANOVA with Scheffé post-hoc comparisons to test the

importance of discussing sexuality in general, the appreciation of the game and inclinations of adolescents to express opinions during the game. The significance level was set at $p < .05$.

In the sample of professionals, mean scores on the general items of the Professional SeCZ TaLK Evaluation Questionnaire and a Feasibility Scale were described in frequencies, means and standard deviations, crossed with professions and type of patient group the professional is working with. The Feasibility Scale consisted of four Likert scale items, its reliability was good (Cronbach's $\alpha = .72$). Due to the small sample of professionals, no analysis of variance was conducted.

3. Results

3.1. Youth' characteristics

In total, 85 adolescents with chronic conditions (including disabilities) participated. Table 1 presents their characteristics. Mean age was 16.7 years (SD = 4.2), range 11–28 years.

3.2. Importance of discussing sexuality and relationships

Mean scores and percentages of all items are presented in Table 2. Mean scores related to setting, age and gender are shown in Table 3. Almost two thirds (62.4%) strongly agreed with the item '*I find it important to be able to discuss sexuality and relationships*', another 22.4% mildly agreed, 5.9% were neutral and 9.5% (strongly) disagreed. There were no significant differences between boys and girls ($F(1, 83) = .33$; $p = .563$). The different age groups, however, attached different values to the importance of discussing sexuality and relationships ($F(2, 82) = 3.68$; $p = .029$). Scheffé post-hoc comparisons indicated that the oldest age group (>18 years) considered this more important than did the youngest age group (<15 years) ($p < .05$). Differences between other age groups were not significant. There were no differences between settings.

Table 1
Characteristics of participants: adolescents ($n = 85$) and professionals ($n = 12$).

	N	%
Adolescents		
Setting		
Special schools for the disabled ($n = 3$)	42	49.4
Outpatient clinic for HIV-positive care	28	32.9
Patient organization neuromuscular diseases	15	17.6
Gender		
Male	39	45.9
Female	46	54.1
Age		
11–14 years	30	35.3
15–17 years	34	40.0
>18 years	21	24.7
Professionals		
Setting		
Special schools for the disabled ($n = 3$)	6	
Outpatient clinic for HIV-positive care	4	
Patient organization neuromuscular diseases	2	
Gender		
Male	2	
Female	10	
Profession		
Nurse specialist	3	
School teacher	3	
Health psychologist	2	
Social worker	2	
Physiotherapist	1	
Not specified	1	

Table 2
The SeCZ TaLK evaluation questionnaires.[a]

	% strongly disagree	% mildly disagree	% neutral	% mildly agree	% strongly agree	Mean	SD	α
Youth (n = 85)								
1. I find it important to be able to discuss sexuality and relationships	2.4	7.1	5.9	22.4	62.4	4.35	1.03	
2. Appreciation Scale (range 7–35)						26.11	6.11	.81
(a) I liked to play the game	1.2	3.5	2.4	34.1	58.8	4.46	.81	
(b) I found playing the game exciting	15.3	16.5	16.5	36.5	15.3	3.20	1.31	
(c) I want to play the game some other time again	9.4	4.7	16.5	30.6	38.8	3.85	1.25	
(d) Personally, I found playing the game appropriate for me	8.2	16.5	12.9	22.4	40.0	3.69	1.36	
(e) The game helps to talk about sex and relationships	8.2	3.5	7.1	24.7	56.5	4.18	1.22	
(f) It is necessary to play this game	7.1	10.6	17.6	28.2	36.5	3.76	1.25	
(g) I have learned or heard something new	31.8	5.9	18.8	20.0	23.5	2.98	1.58	
3. I felt free to express my opinion during the game session (range 1–5)	.0	1.2	3.5	24.7	70.6	4.65	.61	
Professionals (n = 12)								
1. Discussing relationships and sexuality is necessary for the adolescents I work with (range 1–5)						5.00	.00	
2. For adolescents with chronic conditions/disabilities sufficient attention is being paid to relationships and sexuality (range 1–5)						3.00	1.12	
3. I can facilitate the game without an additional training (range 1–5)						4.25	.96	
4. Feasibility Scale (range 4–20)						18.75	1.91	.72
(a) The board game SeCZ TaLK is useful within my organization						4.50	.67	
(b) This game is useful and instructive for the adolescents I work with						4.50	.90	
(c) I would like to use the game again						4.92	.28	
(d) I recommend the game to my colleagues						4.83	.57	

[a] All items were scored on a 5-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree.

Table 3
The Youth SeCZ TaLK Evaluation Questionnaire related to gender, age and type of organization.

	N	Mean[a]	SD	*F*	df	*p*
1. The importance of discussing sexuality and relationships (range 1–5)	85	4.35	1.03			
Boys	39	4.28	1.23			
Girls	46	4.41	.83	.33	1/83	.563
11–14 years	30	4.00	1.11			
15–17 years	34	4.41	1.10			
>18 years	21	4.76	1.03	3.68	2/82	.029
Special school	42	4.12	1.21			
Outpatient clinic	28	4.50	.83			
Patient organization	15	4.73	.59	2.46	2/82	.091
2. Appreciation scale (range 7–35)	85	26.11	6.11			
Boys	39	25.53	6.31			
Girls	46	27.45	5.67	5.03	1/83	.028
11–14 years	30	28.73	4.90			
15–17 years	34	25.26	5.74			
>18 years	21	23.76	7.10	5.07	2/82	.008
Special school	42	25.11	6.00			
Outpatient clinic	28	28.78	5.65			
Patient organization	15	23.93	5.92	4.52	2/82	.014
3. Feeling free to express opinions during the game session (range 1–5)	85	4.65	.61			
Boys	39	4.59	.71			
Girls	46	4.70	.51	.63	1/83	.430
11–14 years	30	4.63	.55			
15–17 years	34	4.53	.74			
>18 years	21	4.86	.35	1.91	2/84	.154
Special school	42	4.43	.73			
Outpatient clinic	28	4.86	.35			
Patient organization	15	4.87	.35	5.92	2/82	.004

[a] *Note*: a higher score indicates a higher importance or appreciation.

Table 4
The Professional SeCZ TaLK Evaluation Questionnaire related to types of organization and professionals.

	Mean[a]	SD	*N*
1. Discussing relationships and sexuality is necessary for the adolescents I work with (range 1–5)	5.00	.00	12
Special school	5.00	.00	6
Outpatient clinic	5.00	.00	4
Patient organization	5.00	.00	2
Nurse	5.00	.00	3
Teacher	5.00	.00	3
Other	5.00	.00	6
2. For adolescents with chronic conditions/ disabilities, sufficient attention is paid to relationships and sexuality (range 1–5)	3.00	1.12	12
Special school	2.67	1.21	6
Outpatient clinic	3.75	.95	4
Patient organization	2.50	.70	2
Nurse	4.00	1.00	3
Teacher	3.00	1.00	3
Other	2.50	1.04	6
3. I can facilitate the game without an additional training (range 1–5)	4.25	.96	12
Special school	4.50	.54	6
Outpatient clinic	4.25	.95	4
Patient organization	3.50	2.12	2
Nurse	4.00	1.00	3
Teacher	4.67	.57	3
Other	4.17	1.16	6
4. Feasibility scale (range 4–20)	18.75	1.91	12
Special school	19.33	.40	6
Outpatient Clinic	18.75	1.50	4
Patient organization	15.50	2.12	2
Nurse	18.33	1.52	3
Teacher	20.00	.00	3
Other	18.33	2.42	6

[a] *Note*: a higher score indicates a higher importance or perceived usability.

3.3. Youth' appreciation of the game

Means and percentages of all items of the Appreciation Scale are presented in Table 2. Mean scores related to setting, age and gender are shown in Table 3. The mean score was 26.11 (SD = 6.11) with an actual range of 7–34. Girls liked the game more than boys ($F(1, 83) = 5.03$; $p = .028$). There were also differences between age groups ($F(2, 82) = 5.07$; $p = .008$). The younger age group (<15 years) had the highest mean score and Scheffé post hoc comparisons showed that this differed significantly from that in the oldest age group (>18 years). Differences between other age groups were not statistically significant. Adolescents from the outpatient clinic had the highest scores on the Appreciation Scale. Mean scores differed significantly between the three settings ($F(2, 82) = 4.52$; $p = .01$). Scheffé post hoc comparisons confirmed that the appreciation of adolescents in the clinic was higher than those in the other settings ($p < .05$).

3.4. Feeling free to express opinions during the game

Almost all adolescents felt free to express their opinions during the game sessions: 70.6% strongly agreed on the item: '*I felt free to express my opinion during the game session*', 24.7% mildly agreed, 3.5% were neutral and 1.2% mildly disagreed. In Tables 2 and 3, the means are displayed. No significant effects were found for gender ($F(1, 83) = .63$; $p = .430$) and age ($F(2, 84) = 1.91$; $p = .154$). The mean scores differed between the three settings ($F(2, 82) = 5.92$; $p = .004$). Scheffé post hoc comparisons indicated that adolescents from the outpatient clinic and the patient organization felt freer to express opinions than adolescents in special schools ($p < .05$).

3.5. Professionals' opinions

Twelve professionals facilitated the game and filled out the Professional SeCZ TaLK Evaluation Questionnaire. In Table 1, background characteristics are presented. Mean scores of the professionals on all items are presented in Table 2. All strongly agreed on the proposition '*Discussing relationships and sexuality is necessary for adolescents I work with*'. Opinions differed on the proposition '*Sufficient attention is paid to aspects of relationships and sexuality for adolescents with disabilities*'. Four did not agree or disagree, four (mildly) agreed and four (mildly) disagreed. Results related to setting, with different patient groups and type of professional are presented in Table 4. Nurses ($n = 3$) strongly agreed on presumed sufficient attention paid to sexuality in their patient group. Ten professionals predominantly agreed on the proposition '*I can facilitate the game without an additional training*'. Especially school teachers felt confident about facilitating the game without previous training.

The mean score on the Feasibility Scale was 18.75 (SD = 1.91) with an actual range of 14–20. The results indicated that school teachers in special schools tended to have the highest scores.

4. Discussion and conclusion

This study evaluated the appreciation and feasibility of a newly developed intervention, the board game SeCZ TaLK, designed to facilitate open communication about intimate relations and sexuality. The majority of the adolescents found it important to discuss sexuality and intimate relationships; most of them felt that SeCZ TaLK encouraged this and they appreciated the game. Health care workers and teachers in special schools confirmed that

discussing these issues was important for their work and were positive about the feasibility of the game.

4.1. Discussion

4.1.1. Stimulating positive sexuality in health care

Positive sexuality is defined as a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination, and violence [36]. Most studies on sexual and reproductive health discuss negative aspects of sexuality, such as teen pregnancy, sexual abuse, unsafe sex and STDs. The literature discussing sexual health in relation to chronic disease and disabilities is no exception to this rule. However, sexual health is more than the absence of disease and risk behavior. Sexual pleasure and satisfaction are integral components of well-being and require universal recognition and promotion. Although persons with disabilities are challenged in this respect, the sexual health debate in chronic disease had rather not be 'problem-based'; it should depart from the positive recognition of their sexual potential.

In our study, both adolescents with chronic conditions and professionals asserted it is important to discuss sexuality in a non-judgmental and playful way. Somewhat unexpectedly, girls and the youngest group of adolescents (<15 years of age) were most enthusiastic. This probably demonstrates that especially the youngest group is most eager to learn or talk about sexual health issues.

Sexual health education interventions are seen as an appropriate strategy for promoting adolescents' sexual health in primary and secondary education [17]. Health care professionals, on the other hand, typically do not discuss sexuality with their patients, because they feel uncomfortable about it and even see it as conflicting with professionalism [20–24]. For example, nurses do not seem to think that patients expect them to talk about sexuality [22]. On a negative note, however, power relations may complicate matters when dealing with adolescents and there is the risk of being accused of sexual assault or indecent behavior. Furthermore, the omnipresence of parents during pediatric consultations seriously hampers an open discussion about sexuality and intimate relations. To ensure that psychosocial issues are addressed in a systematic way, it is recommended to implement the risk assessment instrument HEADDS (talking about Home, Education, Activities, Drugs, Sexuality and Suicide/depression) [37] in consultations with adolescents unaccompanied by parents [19].

4.1.2. Educational games

The validity of games in learning or communication situations is not well evidenced. There is some skepticism about its efficacy as a learning tool. However, games are regarded as tools to motivate and support differentiated learner groups [31]. Our experiences with SeCZ TaLK indicate that it was a strong feature of the game that it was fun to play: 92.6% of all adolescents said so.

It would seem crucial to create an open atmosphere allowing for discussions about intimate relations and sexuality. Group composition should be carefully considered, therefore. In this study, we used mixed gender groups, but this has its limitations as sexual development, needs and perceptions of boys and girls are different. On the other hand, it may stimulate mutual learning. Embarrassment is sometimes mentioned as a negative aspect of using an educational game in a group [34]. Many participants already knew each other (many were class mates), which may be a disadvantage when it comes to discussing intimate issues. Perhaps this explains why those in special schools felt somewhat less free to express their opinions during the game. Fortunately, this was no big problem in playing SeCZ TaLK. In our study, 95.3% agreed (strongly or mildly) with the statement '*I felt free to express my opinion during the game session*'. There is a possible role here for the option to play the 'blush' card when things are too sensitive to discuss.

Almost 40% of adolescents disagreed with the statement '*I learned or heard something new*', indicating that the game is not a substitute for sexual health education talks or lessons. It rather supports professionals in facilitating open communication about sensitive issues.

4.1.3. Limitations

Our study was a preliminary test of the feasibility and appreciation of this new intervention in a small sample of adolescents and professionals. The game was tested in a sample of early adopters who were convinced of the necessity to include positive sexual health education into their daily practice and felt confident to address these issues. Therefore, they cannot be seen as representative of professionals working with adolescents with chronic conditions. It also remains unclear whether the game could be facilitated without additional training. The impact and effects of playing the game need to be researched further.

The main limitation of our study is that it was not a controlled study assessing effectiveness of playing the game on knowledge gain, positive attitudes-beliefs, and self-efficacy on sexual health issues. In fact, only few studies have employed an experimentally controlled design for evaluation of similar interventions [35]; most sexual health interventions with adolescents have not been evaluated at all [17]. In a study to test an educational board game for dengue prevention [35], self-efficacy was measured by a questionnaire and adolescents showed more confidence in performing tasks related to dengue fever control measures. Future evaluations of the effectiveness of SeCZ TaLK should also include self-efficacy measures and could also benefit from including qualitative research methods such as observations, and (debriefing) group interviews.

4.1.4. Implementation

SeCZ TaLK is an attractive intervention from both adolescent and professional perspective, although its use may be controversial as it addresses a very sensitive area: talking about sex with minors. This raises a number of ethical concerns, including confidentiality, safety and parent consent. In this study, these proved not to create serious barriers. The game was introduced as part of the sexual health curriculum of the schools or as part of regular treatment in the HIV-clinic. Application of the game in other settings and in other populations, such as certain religious groups, may raise controversy. Decisions of adolescents to refrain from participation should be respected.

Successful implementation of the game depends on the attitude of health care providers and teachers toward the issue of sexual health in relation to disability. In this feasibility study, all professionals agreed it is very important to discuss relationships and sexuality with adolescents with disabilities. They were highly motivated to experiment with SeCZ TaLK in their own practice, suggesting that they are prepared to learn and apply new skills. As a self-selected sample volunteering to test the game they cannot be seen, however, as representative of their profession or peer group. In other studies, health care professionals have expressed the need for more education and skills to work with adolescents with chronic conditions [38]. Although SeCZ TaLK was designed to be relatively easy to use and comes with an extensive manual, professionals who feel uncomfortable talking about sexual issues may be reluctant to try the game or may find it hard to act as facilitator. Since the role of a facilitator is crucial, a short training might be helpful for these professionals.

4.2. Conclusion

An educational board game like SeCZ TaLK is a promising tool to encourage discussion about sexuality and intimate relations with adolescents with chronic conditions and disabilities. This game is appreciated by both sexes and is useful for a broad age range. It proved to be useful in different settings (including special schools, outpatient clinics and patient organizations) with various patient groups. Adolescents found discussing sexuality and intimate relations important and most felt that SeCZ TaLK enabled this. Almost all participants felt free to express their opinion during the game and thought it was fun to play. Professionals in health care and education also liked the game and would recommend it to their colleagues. Further implementation of the board game will be monitored and the effects will be evaluated.

4.3. Practice implications

The board game is designed to be played in small groups, implying that organizational adaptations may have to be made. Small groups occur naturally in special school and residential settings, but are not readily available in clinical care. Still, there are some developments that may support implementation of SeCZ TaLK, such as psycho-educational groups that help chronically ill children in coping with the condition [39]. In the Netherlands, Young Adult Teams in rehabilitation centers now offer group therapy that could incorporate the game, such as the module Friendship, Intimate relationships and Sexuality [40]. Several Dutch hospitals have also successfully introduced group consultations (Shared Medical Appointments) for adolescents [41]. These offer room for discussing disease-related topics and may also be suited for introducing SeCZ TaLK. In individual consultations, adolescents may be invited to select cards dealing with topics they are interested in.

Using SeCZ TaLK facilitates positive communication about sexual health issues and is a practical tool for services aimed at young persons with chronic conditions and disabilities.

Conflict of interest

None.

Role of funding

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