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"EDUCATION, REFLECTION, DEVELOPMENT" DOCTORAL SCHOOL

EXTENDED SUMMARY

**Psycho-Social Aspects of Sexual Health Education Training for
Special Education Pre-Service Teachers**

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CLUJ-NAPOCA

2019

Contents

CHAPTER 1: LITERATURE REVIEW

This chapter introduces the theoretical background of the studies included in the doctoral thesis. The main topics that constitute the ground of this research are: SHE Introduction and definitions, Theories Associated with SHE, SHE programs, Introduction to SE and definitions, Theoretical fundamentals of Special Needs Education and Theoretical models for SHE in SE.

1.1. SHE Introduction and definitions

The World Health Organization (WHO) defines sexuality as "a central aspect of being human throughout life and encompassing sex, gender identities, and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction" (WHO, 2018). According to Schaafsma et al., (2015) the term 'sexual health' is defined by the WHO (2006) as not only the absence of disease or negative experiences regarding sexuality…but also as "the possibility of having pleasurable and safe sexual experiences". The definition also states "…the sexual rights of all persons must be respected, protected and fulfilled" (p. 4). Accordingly, SHE or sexuality education can be defined as high-quality teaching and learning about a broad variety of topics related to sexuality and sexual health, exploring values and beliefs about those topics, and gaining the skills that are needed to navigate relationships and manage one's own sexual health. Failure to address sexual and reproductive health (SRH) issues deprive girls who become pregnant in their early teens of necessary education (Herat et al., 2018).

In January 2018, UNESCO together with UNAIDS, UNFPA, UNICEF, UN Women and the WHO updated their International Technical Guidance on SHE, thereby reaching a unified approach on Comprehensive Sexuality Education (CSE), (UNESCO et al., 2018). CSE is defined as being a curriculum-based process of teaching and learning about cognitive, emotional, physical and social aspects of sexuality. It aims to equip children and young people with knowledge, skills, attitudes and values that will empower them to: realize their health, well-being and dignity; develop respectful social and sexual relationships; consider how their choices affect their own wellbeing and that of others; and, understand and ensure the protection of their rights throughout their lives (UNESCO et al., 2018). Lachover and Argaman (2007) argue that sexuality education is based on three major concepts: sexual awareness, sexual assertiveness and conscious consent. *Sexual awareness* includes perception and self-comprehension of the factors and terms that affect the sexuality of the individual (Snell, 1991). *Sexual assertiveness* includes an understanding of the sexual area, recognition of personal wishes and their definition, development of skills to express such wishes in a direct, honest, clear and safe manner (Hannah & Stagg, 2016). *Conscious consent* relates to consent that is acquired directly, without coercion of manipulation (Argaman, 2010; Fisher et al., 2011;).

In the 21st century developing balanced comprehensive SHE programs has gained increasing importance as young people are continually exposed to new sources of information particularly social media. Much of the information concerning sexuality, may be distorted, unbalanced, unrealistic and often degrading, particularly for women (Seidman, Fischer and Meeks 2007; Crooks and Baur 2014; Raz and Levi 2014). Darom and Skoop (2014) found that most teenagers acquire their knowledge and attitudes toward sexuality from pornographic materials. A new sexuality education rationale has therefore emerged, the need to counteract and correct misleading information and images conveyed through the media (Seidman et al., 2007; Crooks & Baur 2014; Raz & Levi 2014).

SHE in this doctoral research is understood as learning about the biological, cognitive, emotional, social, and interactive aspects of sexuality. We consider that SHE should start as early as possible in childhood and progress through adolescence and adulthood. SHE aims at supporting and protecting the sexual development of children and young people. It gradually endows children and young people with information, skills and positive values to understand and enjoy their sexuality, have optimal and positive relationships and take responsibility for their own and other people's well-being. In SHE, the primary focus is on sexuality as a positive human potential and a source of satisfaction and pleasure as aspects of well-being (WHO, 2002; 2006; UNESCO, 2015 a).

1.2 Theories Associated with SHE

SHE curricula in schools and programs in the community are built around a variety of theories related to health behaviour theory. It is important to note that different target populations may require different combinations of interventions to change health behaviour. Furthermore, teaching social skills relevant to sexual behaviour in classroom settings requires specialist expertise both in program design and in delivery by teachers or facilitators.

1.2.1 Bronfenbrenner's Ecological Systems Theory

In the ecological conception of health promotion, an individual is regarded as being part of his or her environment, so the individual's behaviour is affected by the actions of communities and organizations (Bronfenbrenner, 1986; Bronfenbrenner & Morris, 2007). For example, whether an individual uses a condom may be influenced by the individual's knowledge and motivation, but it will also be affected by laws passed by legislators, actions taken by health authorities, behaviours taught be schools and information passed on by other decision-making groups (Schaalma et al., 2004). The social-ecological model, based on Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1986; Bronfenbrenner & Morris, 2007) acknowledges that a child's development and his or her sexual behaviour is affected by a series of concentric nested spheres of influence, centered on the individual, then individual relationships, community and society with gradually broadening diameters. Health promotion in general and SHE in schools in particular needs to be evidence-based, needs driven, subject to evaluation, and ecological in perspective (Schaalma et al., 2004).

1.2.2 Lewin's seminal field theory

Sexual health professionals and educators focus many of their efforts on changing the sexual health behaviour of individuals. Lewin's dynamic theory of personality including his seminal field theory (Lewin, 1935) were among the earliest theories of health behaviour, introducing the ideas that there are both barriers and facilitators to behaviour change, with change being a process developing through different stages.

1.2.3 Health Belief Model (HBM)

Work by American social psychologists during the 1950s led to the development of the health belief model, which became an accepted conceptual framework for health behaviour research in relation to discovering what may lead to change in health-related behaviours and as a guide for health interventions (Abraham & Sheeran, 2005; Rosenstock, 1991). Initially, it had been thought that demographic variables such as gender, socioeconomic status, ethnicity and age have the potential to determine behaviours, but these variables could not be changed by education. The model was built upon Lewin's Cognitive Theory (1951) and on Skinner's work on conditioning (Skinner1938), which link behaviours with beliefs, and explains why people decide to change behaviours in relation to the perceived level of threat. Perceived levels of benefit and barrier (or threat) are weighed up. If perceived benefits outweigh the barriers people will act. Education is essential so that people have adequate knowledge to weigh actual benefits and barriers, so all risks can be taken into account.

1.2.4 Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TBP)

The Theory of Reasoned Action (TRA) which was formulated at the end of the 1960s (Fishbein & Ajzen, 1975) and the Theory of Planned Behaviour (TPB) which was developed during the 1980s (Ajzen, 1991) focus on theoretical constructs that are concerned with individual motivational factors as determinants of the likelihood of performing a specific behaviour. These two theories are widely used in areas such as promoting healthy behaviours such as exercise regimes, weight gain prevention, and countering addiction as well as promoting sexual health through condom use (Taylor et al., 2007).

1.2.5 The Trans-Theoretical Model (TTM)/ Stages of Change (SOC) Model

This model was developed by Prochaska and DiClemente at the start of the 1980s. As with the HBM, the TRA and the TPB it is based upon the concepts developed by Lewin, however, it was also influenced by psychotherapy. As it links concepts from various theories it has a temporal dimension and is also known

the stages of change (SoC) model (Prochaska et al 1994, Taylor et al., 2007). This model has been widely used in interventional programmes designed to change health behaviour, and is popular with health educators in general, and sexual health educators in particular despite concerns as to the validity of the five stages of change (Taylor et al., 2007).

1.2.6 Information-Motivation-Behavioural Skills (IMB) model

The IMB model was proposed by Fisher & Fisher (1992) to explain HIV behaviours and is based upon three constructs: information, motivation, and behavioural skills—needed to engage in a given health behaviour. It is currently used to create effective SHE programs (Virul & Zencir, 2010). This model is also used for understanding sexual risk behaviour, with the IMB model positing that individuals must be informed, motivated, and behaviourally skilled to initiate and maintain precautions related to the prevention of sexually transmitted diseases (John, Walsh & Weinhardt, 2017).

1.3 SHE programs

Comprehensive programs include a variety of topics such as physiology and anatomy of the body, the variety of sexual orientations, gender identity, prevention of sexual transmitted diseases (STD) and contraception and sexual stereotypes. However, according to a comprehensive study in the Unites States on public opinion towards teaching SHE in schools (Bleakley, Hennessy & Fishbein, 2006), a vast majority (82%) supported SHE in schools, favouring programs only including abstinence and information about contraceptives. Many European and Asian countries differ to the United States in their approach to SHE (Ketting & Ivanova, 2018), agreeing that comprehensive, age and development appropriate SHE programs must be included in school curricula. According to Brosch, (2007), the most common goals of SHE programs are: 1) Increasing student knowledge into individual and group sexual attitudes; 2) Developing a stable personal system of values in relation to sexuality and its many expressions; 3) Developing healthy and responsible sexual behaviour towards self and others; 4) Developing positive attitudes towards sexuality; 5) Developing a stable personal system of values in relation to sexuality and its many expressions.

1.3.1 Principles guiding SHE Programs in Schools

Five principles guiding SHE curricula are noted by the European Office of the WHO (WHO, 2010): 1) SHE is age-appropriate with regard to the young person's level of development and understanding, and culturally and socially responsive and gender-responsive; 2) SHE is based on a human rights approach; 3) SHE is based on a concept of well-being, which includes health; 4) SHE is firmly based on gender equality, self-determination and the acceptance of diversity; 5) SHE is based on scientifically accurate information.UNESCO et al. (2018) also stated that SHE should be curriculum based, incremental, transformative and able to assist with the development of life skills needed to support healthy choices. As reviewed by Pop & Rusu (2017) and Pop (2018), there are four main types of SHE programs in schools: 1) Abstinence only until marriage. 2) Abstinence plus SHE programs. 3) Comprehensive SHE programs. 4) Holistic SHE programs.

1.3.2 Challenges faced by SHE programs

SHE remains a sensitive issue, despite the recent developments outlined above by international policy makers such as the WHO, UNESCO and UNFPA. As indicated by Auteri (2015), there remains an enormous disparity between policy and implementation on an international level. This is related to the varying values and moral questions involved that give rise to many disagreements among policy makers, teachers and parents on the characteristics and content of SHE programs (Corngold, 2013). SHE programs may face resistance from parents who consider that SHE is primarily the parents' responsibility. These parents, in practice may not provide any education at all to their children on these topics, yet also criticize not only the content of programs but also competence of teachers providing the education (Pop & Rusu, 2017; Pop, 2018). Parents varying attitudes constrain schools when attempting to tailor SHE programs to their community's needs (Zimmerman, 2015).

Another challenge faced when attempting to implement SHE relates to the teachers and counsellors working with the students. If they have not received training, equipping them with adequate knowledge and skills,

then they may not be able to deliver the programs developed. Due to the lack of sexuality training programs, Cozzens (2006) found that teachers have had little knowledge of adolescent sexuality. Other studies found that some teachers reported the belief that SHE education would encourage adolescents to partake in early sexual experimentation and non-responsible sexual behaviour (Chirawu et al., 2014).

1.3.3 Challenges relating to Multiculturalism and Interculturalism

The situation regarding interculturalism / multiculturalism and SHE is extremely complex, with different cultures have differing attitudes to the role of educators and counsellors in their society, as well as to sexuality and SHE (Dwairy, 2008). In multicultural societies SHE programs need to be accessible to those with different languages and different cultural traditions. SHE professionals should be sensitive of cultural norms in order to maintain trust. Immigrant populations with cultures different to the host country may be perceived as having views incompatible with accepting and inclusive intercultural attitudes to LGTB cultures. Problems can arise when groups refuse to be involved in dialogue with the others (Mepschen, Duyendak & Tonkens, 2010).

1.4 SHE programs in Israel

In 1978, the Israeli Ministry of Education declared that education for sexuality is mandatory from 1st to 12th grade (MOE, 1999). However, Harpaz (2010) describes two perceptions regarding SHE in Israel. The first states that the school system is not prepared to deal with it, and it is not the school's duty as it is the place to acquire knowledge and skills in various disciples. This view has partially persisted up until now, even though it is predominant in those conservative countries where parents are not likely to enter in discussions on sexual health and sexuality with their children (Ketting & Ivanova, 2018). The second perception presented by Herpaz (2010) states that the school must deal with SHE because ignoring the subject, especially with adolescents, may emphasize the destructive aspects of sexuality. Brosch (2007) indicates that in Israel, although teachers were willing to teach sexuality, few had learned the subject in a seminar (Brosch, 2007; Assulin & Barnea, 2002). SHE programs are part of the mandatory curriculum of "Life Skills" – a thorough and structured developmental program that is taught by teachers with the instruction and guidance of the Israeli school counsellors (Ministry of Education, 2010). Although the Life Skills program is mandatory in Israel, a survey that was carried out by the Ministry of Education demonstrated that it is implemented only by 60% to 70% in the secular school system. Among those who implement it, the sexual education topics are not always included– which means that the implementation is partial and selective (Weissblai, 2010). In the 2012-2013 school year, a special unit in charge of SHE was established at the Ministry of Education in Israel. Zvieli-Efrat (2010) states that although several SHE programs were developed in Israel; their implementation is not optimal because of lack of resources and trained professionals.

1.4.1 Multicultural Aspects of SHE programs in Israel

The Israeli education system is divided into different parts each serving different sectors, with new immigrants, ultraorthodox Jews and indigenous Arab populations each presenting different cultural and linguistic challenges to the development of culturally sensitive educational programs (Gumpel & Sharoni, 2007). People from different ethnic backgrounds in Israel may also have widely varying attitudes towards sexuality and SHE programs (Lapidot-Berman & Firstater, 2018). SHE in Israel is frequently delivered by school counsellors, rather than other teachers who may find difficulty with the content. Although some Arab educational counsellors have taken training programs in delivering SHE programs, many Jewish counsellors also work in the Arabic sector (Sinai & Shehade, 2018). In traditional Muslim society, parents are responsible for their children's SHE in accordance with Sharia law appertaining to sex, sexuality, marriage and the rights of the husband and wife within a marriage (Sinai & Shehade, 2018). However, in reality, there is little public discourse on sex and sexuality in traditional Arab society (Cok & Gray, 2007) and most Arab parents do not openly discuss sex with their children (Joubran, 2008). Counsellors trying to deliver SHE in the Arab education sector face the same problem of the incongruity between theories studied derived from a Western perspective and putting them into practice at work in schools with an Arab

culture. Western perspectives assume that individuals are autonomous entities, entitled to unique thoughts, responsible for their own actions. Traditional Arab culture, by contrast, views the individual as an entity that is dependent on the collective in every aspect of life (Erhard, 2014; Erhard & Harel, 2005).

1.5 Introduction to SE and definitions

Special Education (SE) is directed towards a diverse target population, including, among others, people with sensory impairments, developmental disabilities, emotional and behavioural problems, learning disabilities and communications disabilities. Due to these various impediments, modes of teaching and presentation of content needs to be adjusted to suit each population's particular needs. As stated in the 'Individuals with Disabilities Education Act' (2018), SE is defined as specially defined instruction, which means that the teachers have the responsibility to adapt the content, methodology, or delivery of instruction to meet a student's disability related means, and to ensure his or her access to the general curriculum and school's activities. In general, a child has SE needs if it is more difficult for them to learn than children of their age. SE, as defined in The SE Law of the State of Israel (1988, 2018), consists of "systematic instruction and treatment given to every child with special needs ... according to the needs of the child". Special needs, in this context, are mental, physical, emotional, cognitive, behavioural, communication skills, and other forms of impairments (The SE Law, 1988). Children with special needs may be integrated into the educational system in various ways, from being placed in SE schools fitted to their unique need, to being integrated into regular classrooms, generally accompanied by a special-needs helper or integration expert (Lauderdale-Littin, Howell, & Blacher, 2013).

1.6 Theoretical fundamentals of Special Needs Education

1.6.1 Vygotsky's Sociocultural Theory

The understanding of SE, including the roles of the teachers and of the environment within which special needs education takes place has been strongly influenced by the Soviet Psychologist Lev Semionovich Vygotsky (1896 – 1934). SE differs from regular education in the additional requirements of the system. Vygotsky's unique insight defined the individual's handicap in terms of the social implications rather than only the neurological or physical impairment. The primary impairment relates to the organic disability while the secondary impairment relates to the impact on higher psychological functions as a result of the social implications of the primary impairment. This secondary impairment caused by social difficulties may exacerbate the primary disability: "the experience of being retarded makes one more so" (Haywood, 1989). Vygotsky emphasized the importance of societal attitudes in being critical to the deterioration or improvement of the learning and development of the individual with a disability, and encouraged the identification of positive qualities. Vygotsky's concept of the "zone of proximal development", referring to the potential for an individual's cognitive development under the influence of his or her environment, referred to as "Vygotsky's Sociocultural Theory" claims that all learning takes place on two levels, occurring primarily on a social level and only after that on an individual level (Gindis, 2003; Vygotsky, 1978). The individual's family, peers, school and teachers are critical for his or her development and learning. The inner zone is the individual's current ability, the next zone going outwards from the centre is the zone of proximal development and the outermost area is the extended zone due to favourable conditions. Talented teachers supply 'scaffolding' to help their students reach the extended zone. Vygotsky believed that SE addresses the secondary disability, in combatting the damage done as a consequence of the primary disability.

1.7 SE in Israel in practice

In Israel as of 2016, based on unpublished data available to the researcher from the Israeli Ministry of Education, there were 213,372 special needs students enrolled in the school system. Among them, 41,350 are in segregated SE schools, 42,336 are in special classes within regular schools, 113,076 are integrated with professional support in regular classes, and 16,610 with complex disabilities are enrolled with professional support in regular schools as well. All of these students are in need of SHE that addresses their needs, which are currently not being adequately met. Furthermore, due to the multicultural nature of Israel's society, learning disability professionals have had to develop expertise in diagnosing children whose mother

tongue may Hebrew, Arabic, French, Yiddish, a language from one of the countries from the Former Soviet Union, or Amharic for new immigrants from Ethiopia amongst others (Gumpel & Sharoni, 2007).

In 2007, a public committee for the analysis of the SE System was established in Israel, with the aim of examining Ministry of Education policy and budgeting of SE and to establish priorities. The committee's report, known as the Dorner report, published in 2009, concluded that more parental involvement should be allowed in deciding whether a child was placed in the SE framework or in the regular education framework. Where possible, children with disabilities should be included in the general education system, with funding allocated by the government to provide the extra support within the system. As noted by Alaluf (2017), while in the past professionals were regarded as experts who dictated best practice while families were regarded as receivers of specialized services, more recently teacher training programs began to emphasize the approach of having families work in partnership with professionals. In Israel, in a similar manner to as in US, an individualized educational program (IEP) is developed at the start of each year for each child. However, in contrast to America, parental consent is not required for IEP implementation (Meadan & Gumpel, 2002).

1.8 History of SHE in SE

Sexuality is universal part of the human experience, yet sexual health is often ignored especially in regard to persons with disabilities (Argaman, 2018: Daciuk, 2015; McDaniels & Fleming, 2018; Girgin, et al., 2017; Katalinic et al., 2012; Murphy & Elias, 2006; McDaniels & Fleming, 2016; Schaafama et al., 2013; Treacy, 2016; WHO, 1975, 2006). Up to the middle of the 20th century, negative attitudes led to the neglect of rights of people with intellectual disabilities (Kempton & Kahn, 1991). From the 1960s and 1970s, with the deinstitutionalization of people with what was still termed mental retardation, some attempts were made, both by families and by professionals, to begin helping individuals with intellectual disabilities understand their sexuality and engage in appropriate self-affirming sexual behaviours (Argaman, 2018; Kempton & Kahn, 1991). However, it took decades before it was widely understood in terms that intellectually disabled people had the right to sexual fulfilment, with the recognition that, if left unassisted, adolescents with disabilities lack the knowledge needed to develop a healthy sexual identity, leading to severe confusion, frustration and the development of socially unacceptable behaviours (Baladerian et al., 2013; Blanchett & Wolfe, 2002; Daciuk, 2015; Lapidot-Berman & Firstater, 2018; Owens 2014).

Early SHE programs for SE students were intended as being protective, rather than enriching for the participants and did not necessarily assess the knowledge or needs of the people the programs were intended for (McCabe &Schrek, 1992; Szollos & McCabe, 1995). They focused on 'self - regulation' by teaching negative consequences of sexual intercourse, and the limitations that apply such as appropriate places (Daciuk, 2015; Whitehouse & McCabe, 1997). During the late 1980s and 1990s, the first SHE programs for people with intellectual disabilities were described in the literature, mainly in response to the growing increase in numbers of people in the community of people infected with HIV and developing what was then the uncontrollable and devastating onset of AIDS (Whitehouse &McCabe, 1997). Recently there has been improved understanding in the field, and it is now considered that properly adapted SHE programs are of particular importance to people with disabilities and to SE students, for a number of reasons. The need for SHE programs has gained support, and an understanding of their contribution to the development of the individual is gradually being recognized (Rowe &Wright, 2017).

1.9 Theoretical models for SHE in SE

In 1976, a generalized model known as the PLISSIT was developed by Jack Annon, as a conceptual scheme for treatment of sexual problems (Annon, 1976). PLISSIT stands for "Permission, Limited Information, Specific Suggestions, and Intensive Therapy". An extended PLISSIT model presented by Taylor and Davis (2007) may be more useful for people with disabilities. It had been assumed that if people do not raise issues that their silence meant there were no issues to raise, but in the field of sexual wellbeing, this cannot be assumed. The Ex-PLISSIT model also features extensive reflection and review in order to develop knowledge and awareness. A new model was presented by Ronit Argaman at the 2014 NADD international conference on "Well-Being in Dual Diagnosis: Research to Practice" (IDD/MI). The model recognizes that

people with the dual diagnosis of intellectual developmental difficulties (IDD) and mental illness (MI) are in need of extra support (Argaman, 2018).

1.10 Challenges encountered in developing SHE programs in SE

It is generally acknowledged that one of the pervasive problems that has to be overcome is the widespread assumption of the 'asexuality' of people with disabilities (Daciuk, 2015; Earle, 2001, Esmail et al., 2010). This is in part due to the persistence of negative attitudes, and partly due to their lack of training (Argaman, 2018; Gerchenovitch & Rusu 2019). People having the normal needs for love, warmth, affection, touch, and sexual pleasure are deprived these because their educators and caregivers do not yet fully understand these needs, as there may be a slow development of other behavioural patterns, giving the impression of a childlike level of development, incompatible with sexual needs, which none the less, are present (Argaman, 2018; Rowe &Wright, 2017). Unfortunately, the means to cope with these needs are often absent (Rowe &Wright, 2017). Even where SHE programs exist for the SE sector, their delivery depends upon the preparation and willingness of educators to deliver these programs. Not having the skills to impart SHE, teachers and caregivers can hardly be expected to approach this difficult topic with confidence (Gerchenovitch & Rusu, 2019). In order for individuals with special needs to be taught SHE adequately, not only specially adapted curricula are needed, but also specially adapted training programs to help educators deliver these curricula.

1.11 SHE in SE in Israel

According to the Israeli Ministry of Education there is no specific, adjusted program in Israel for SHE for SE students and institutions (Barnard-Brak, Schmidt, Chesnut, Wei & Richman, 2014; Lahover & Argaman, 2007). Only one study of a SE school in Israel was published, where a SHE program was implemented, focusing mainly on the prevention of sexual harassment of students (Manor-Binyamini et al., 2013). Crucially, it was found that teachers and caregivers in SE perceive that they lack appropriate training to provide information on sexuality and sexual health and disability. From the 1980s Professor Shimon Zachs, who pioneered the development of a SE system in Israel, promoted the inclusion of SHE for children in the SE system. One early program for psycho-sexual education for people with intellectual disabilities was prepared by the SE department of the Israeli Ministry of Education in the 1990s (Nissim, 1995). Further developments have been made over the last 20 years, writing new programs and preparing written guidance for teams delivering SHE in SE (Lachover & Argaman, 2007).

However, in recent years there have been attempts made in individual SE schools catering for pupils with SN to develop SHE programs. For example, as described by Manor-Binyamini, Schreiber-Divon & Stein, (2013) a program was developed in the Shalom Junior High School in Petah Tikva (a town in Israel) which developed a SHE curriculum adapted for the special needs including mild intellectual disabilities of the pupils attending the school aged 12 – 21 while supporting the teaching staff delivering the program. A curriculum for socio-sexual education at the Reut Junior School (also in Petah Tikva), for pupils on the autism spectrum aged 6-12, has also been developed by the school staff together with the school's educational counsellor. The curriculum includes detailed goals and techniques for delivering each component, covering topics such as physical and sexual development, body image, hygiene, healthy lifestyle, relationships and behavioural norms including sexual behaviour.

1.12 Preparation of teachers for delivering SHE programs in SE in Israel

Teachers report not having received adequate knowledge and training to deliver SHE to students with intellectual disabilities (Aderemi, 2014) and other special needs (Girgin et al, 2017). In Israel, only recently, a few SE training programs for SE PSTs have been implemented. (Lachover & Argaman, 2007). The Israeli Family Planning Association (IFPA) conducts workshops on sexuality for people with disabilities, and holds an annual national seminar on the topic, run in collaboration with academic and professional organizations. The IFPA also offers specialized sexual and reproductive health services for people with disabilities. Since 2010, the SE department at the Israeli board of education provides a professional SHE training program for SE teachers teaching SE pupils, and offers an annual national conference on various SE SHE issues.

Justification of the doctoral research – Gap in knowledge

Teachers and caregivers in SE perceive that they lack appropriate training to provide information on sexuality and sexual health (Kim, 2009, Chirawu et al. 2014; East and Orchard, 2014). Knowledge is also lacking on: 1) The SHE needs of people with disabilities; 2)The SHE needs of people with disabilities defined by the disability category; 3) Teacher education in SHE for people with disabilities, and 4) Valid and reliable SHE curricula for both the general population and for people with disabilities.

Importance of the Research

In Israel, as in the world in general, SHE has lagged behind other areas of education with inadequate preparation of teachers. Research indicates that people with special needs constitute at risk populations in terms of sexual abuse with children with disabilities being 3.4 times more likely to be sexually abused than their non-disabled peers (Manor-Binyamini et al., 2013). In recent years, the number of pupils in the SE sector in Israel has risen by over 3% with those diagnosed with autism having continually growing over the last four years. Despite the risk and the growing population, SHE in the SE sector is less well developed than in mainstream education. Furthermore, the customized in-depth teacher preparation required to enable adequate delivery of SHE programs in SE is not yet in place. Programs developing and assessing preparation for teaching SHE in Se are therefor of critical importance.

CHAPTER 2. METHODOLOGY

2.1. Research paradigm

In this doctoral thesis, a mixed methods research paradigm, combining quantitative and qualitative approaches was employed due to the expectation that it would yield more comprehensive and in-depth information regarding the attitudes and capabilities of pre-service teachers preparing to teach SHE in SE. This expectation was grounded in the recently explored beliefs that mixed methods research (MMR) allows a pragmatic and multi-faceted approach to understanding social phenomena (Creswell, 2015; Johnson, 2012).

The quantitative approach was used in two of the studies presented in this doctoral thesis: study one- the pilot study and study two- the pre/post evaluation study. Quantitative research needs to fulfil two important criteria: validity and reliability. Furthermore, quantitative research is expected to display external validity, meaning that although the research is conducted on a representative sample, its results can be generalized to the entire population (Bryman, 2012).

The **qualitative approach** focuses on an attempt to understand the participant's subjective and unique world. The social context plays a significant role in the research and the interpretation of the qualitative data must take place within the context and by a researcher who is familiar with the society and culture in which the research is conducted (Shkedi 2011). In the case of the current research involving SE PSTs choosing the use of a qualitative approach allowed for the exploring of phenomena that could not be quantified or measured, which included the attitudes, emotions and behaviours of the PSTs. By observing the phenomena from various angles, using different techniques and methods, triangulation allows the researcher to identify more accurately aspects of the phenomena (Creswell, 2009).

2.2 Overview of the research design and of the four research studies

The research in this thesis was organized in four studies. The first study was a systematic review of literature on SHE in SE; the second was a quantitative pilot study validating the questionnaires developed for use in the main pre/post study; the third study was a quantitative study assessing the impact of participating in an SHE training program on PST's knowledge, attitudes and capabilities of teaching SHE in SE; the fourth qualitative reflective study added depth to the data gained in the previous studies. Merging the results of the four studies allowed a fuller picture to be gained on the importance of conducting

designated training programs on SHE for PSTs intending to work in SE and on the impact of one such course on the knowledge, attitudes and capabilities of the PSTs.

2.3 The four research studies

The doctoral research consisted of four studies.

Study 1 - Systematic Literature Review: Components of SHE Programs for SE Students and Pre-service Teachers.

Study 2 – Development and validation of the KASHED questionnaire regarding sexual health education training program for special education pre service teachers – pilot study.

Study 3: A quantitative investigation of the effects of participating in SHE training program on the attitudes, knowledge and willingness to teach SHE of PSTs in Israel.

Study 4. Qualitative analysis of the Pre-Service Teachers (PST) personal reflection following their participation in SHE (SHE) training program addressing persons with special needs.

2.4 Research populations

Study 2 – Included 38 Israeli SE pre-service teachers, 2 men (5.3%) and 36 women (94.7%), who attended colleges and teaching seminars during 2016-2017. All the participants were native Jewish Israelis, aged between 22 and 47 (M = 28.66, SD = 5.69). The data collection for this pilot study was performed throughout the academic year 2016-2017 in the SE departments of two teacher-training colleges of education in the centre of Israel.

Study 3 - Included 179 Israeli PSTs. The study was conducted during the 2017-18 academic year.

Study 4 - Included 11 PST's studying in an educational college in the centre of Israel. The 11 pre-service teachers had participated in a SHE training program focusing on teaching SHE to students with SE needs during the spring semester of 2018. All the PSTs were involved with teaching students with SE needs. The PSTs wrote their personal reflections at the end of the semester and shared details about their training and personal opinion and experiences in SHE. The demographic characteristics of the participants are summarized as: all of pre-service teachers that participated in the reflections were females. Their ages ranged from the youngest (24 years old) to the oldest (27 years old). The mean age of the pre-service teachers was 25 years old, standard deviation 0.98. They were all training in the SE track.

2.5 Research Tools

Systematic literature reviews were first established in the medical sciences in the 1970s but since then they have been applied to other fields (Mallet et al., 2012). Critical systematic reviews, which include also meta-analysis, aim to establish which findings are consistent across populations and increase accuracy of findings (Mulrow, 1994). It is considered that systematic review principles improve the rigor and breadth of literature reviews and help find focused research questions, even if they are not a dead end in themselves (Mallet et al., 2012). It is generally accepted that there are five steps included in conducting systematic literature reviews (Khan et al., 2003; Ryan, 2010). The five-step protocol was used in the study 1 of this doctoral thesis, as it follows (Khan et al., 2003):

    1. Identifying and formulating the research questions

    2. Defining search criteria including data bases to be used and identifying relevant studies

    3. Critical evaluation of the relevance and quality of studies found leading to final selection of studies.

    4. Summarizing and charting the data in table form.

    5. Collating and interpreting the findings.

The literature search was conducted by using a keyword-based search through several academic databases. These databases included: ProQuest – Education database, ProQuest – ERIC, Psychnet, EBSCO Host – Psychology and Behavioural Science Knowledge. The literature search was based on the combination of the following keywords: Sex education, SE, pre-service teachers. Based on the keywords search, hundreds of studies were identified. The articles were then filtered according to further criteria.

The following questionnaires were used in the pilot study to validate the questionnaires. As will be explained, these questionnaires were then adapted for use in the pre/post study.

1. Brosch's Demographic and Sexual Education Questionnaire that assesses the Attitudes, the Knowledge, and the Willingness of Pre-service teachers of Education to deal with topics connected to Sex and Family Life Education as part of their teaching tasks (Brosch, 2007).

2. Reuth Open Door – IFPA's (Israel Family Planning Association) Questionnaire: Attitudes about Sexuality for People with Disabilities (Porat, 2009).

3. Attitudes toward Sexuality Scale (ATSS): Fisher and Hall (1988), published in Handbook of Sexuality Related Measures (3rd Edition), Routledge, New York & London.

These reliable and valid pre-existing questionnaires were adapted for the purpose of this research. The questionnaire package was designed to examine the impact of a SHE program for Israeli SE PSTs in order to assess their attitudes, knowledge, and capability to teach and deal with topics connected to SHE as part of their teaching tasks. The questionnaires were adapted to suit the study population, in all that relates to the content and the drafting details and based on the researcher's professional knowledge of the topic of SE sexuality education. The pilot study was conducted to validate the three questionnaires that were adapted for use in the research.

The three questionnaires were included in a single package, i.e. **KASHED** questionnaires (Knowledge and Attitudes to SHE and Disability).

The **KASHED** questionnaires (Knowledge and Attitudes to SHE and Disability), adapted and developed from the pilot study, was administered to control and experimental groups of PSTs in Israel. The control group were students at the colleges who did not take part in the SHE training program. The experimental group took part in a novel national program preparing PSTs to teach SHE in SE. Both groups answered the questionnaires at the same time, before and after the training program, even though the control group did not take part in the course.

Based on the statistical analysis of the preliminary data from the pilot study, the KASHED package of questionnaires included 43 items/survey statements and two scales (one of 12 items and the other one of 16 items).

Qualitative analysis of the PST's personal reflections was conducted, following their participation in SHE course addressing persons with special needs. The research goals were in part to identify an additional support for the quantitative data presented in the previous study. The specific goals were: To investigate the attitudes of PST towards providing SHE to students with SN; To explore the perceptions of the PST towards their ability to effectively provide SHE to SN students; To examine the changes in the PSTs' perception of the importance at professional and individual levels of SHE, following their participation in SHE teacher training. A deep analysis of the personal reflections' texts can lead to the discovery of the thematic composition of the reflections enabling the reflections to be categorized into themes.

2.6 Triangulation and generalization

Triangulation involves the organization of data from various research methodologies (Teddlie & Tashakkori, 2009). Greene et al. (1989) claimed that triangulation can decrease bias and increase the validity of a single research study.
Generalizability allows the researcher to extend the findings of a research to other cases, environments, and populations (Goertz & Mahoney, 2012; Shkedi, 2012). The quantitative research aims for objectivity in collecting data using standard tests and statistical analysis (Shkedi, 2012). The qualitative interviews

supported and added in-depth cultural and personal related information to the quantitative data derived from the KASHED questionnaires. Thus, because the present study combined several research methods that confirmed and complemented each other, the conclusions can be cautiously generalized and adapted by different countries and cultures.

2.7 Ethical Considerations

The research was conducted in four colleges of education in the central region of Israel. In order to conduct this study according to the required procedures, the researcher gained permission to collect data at two levels: from each of the pre-service teachers, to analyse their written self-reflections following their studies at SHE for SE course, and from the college's research authority Regarding the data collection, upon the approval for conducting the research by the college committee of ethics, participants in the research were located by distributing personal applications to students in the SE track of studies. Every single participant was required to fill out a form of consent, with the participant's signature confirming his/her full understanding of that form. There were no relationships or conflict of interests between the pre-service teachers and the researcher. Answering the questionnaire was anonymous. Since the personal reflections of the PSTs were not pre-structured, measures were taken by the researcher to make sure that the message of the PST's was clear.

2.8 Statistical Analysis of the data

Questionnaires were psychometrically validated using Alpha-Cronbach reliability tests. Statistical analysis of the data used the following tests: non-parametric Shapiro-Wilk tests, Levene's tests, Chi square (χ^2) analyses. The statistical data (Mean, SD and t-values) were examined for significant differences using Cohen's d tests. Wilcoxon tests, McNemar test analyses, a two-way Mixed ANOVA analysis, Bonferroni analyses and paired sample t-test analyses. In order to examine significant differences between the two study groups, one-way ANCOVA analyses were conducted. MANOVA analyses, Pearson correlations analyses, and Spearman correlations were conducted. Three multiple regression analyses were conducted in order to examine the contribution of the PST's background characteristics to their level of knowledge of topics related to SHE, the attitudes towards sexuality and disability and the attitudes towards sexuality *before the SHE training program* and an additional three regression analyses were conducted in order to examine the contribution of the PST's background characteristic to the level of knowledge of topics related to SHE, the attitudes towards sexuality and disability and the attitudes towards sexuality *after the SHE training program*. The independent variables were entered in a step-wise manner.

CHAPTER THREE: ORIGINAL RESEARCH CONTRIBUTIONS

3.1. Study 1. Components of SHE Programs for SE Students and Pre-service Teachers: A Systematic Literature Review

3.1.1 Introduction and Research Goals

This study reviews the current academic literature on formal SHE programs for special needs students in a systematic manner. This study also seeks to identify the special challenges that such programs may pose to educators and caregivers, as well as the important and central factors that these programs include or should include, both with respect to educators / caregivers and with respect to the special needs of the students.

During the initial stage of this doctoral research project, the researcher was aware of the recent systematic reviews on various topics concerning sexuality for people with disabilities. Based on the already published studies it was decided that the present systematic analysis of the literature will search for *components of SHE Programs for SE Students and Pre-service Teachers* only on studies published between the years 2009-2016.

3.1.2. Methodology

The systematic review was performed following the protocol described in Judi & Sahari (2013) and Petticrew & Roberts (2006). Specifically, the first stage of the protocol consists on identifying the need for such a review, followed by the formulation of the research questions and of the search key words.

The systematic literature review sought to elucidate the following questions:

 1: What programs exist for teaching SHE in SE. The programs searched for include those directed towards teachers and those directed towards students. **2:** From the programs found in the search, what challenges do teachers and professionals encounter when teaching sexual education programs in SE? **3:** What components are meaningful to students and teachers and should be included in potential sexual education programs in SE frameworks?

The systematic literature search was conducted by means of a *keywords search* through several academic databases in a defined time frame (2009-16). These databases included: ProQuest – Education database, ProQuest – ERIC, Psychnet, EBSCO Host – Psychology and Behavioral Science Knowledge. The literature search was based on the combination of the following keywords: *Sex education*, *SE*, *pre-service teachers*. The articles identified were then filtered according to further criteria.

3.1.3. Findings

This section includes the results on the distribution of studies by country of origin, study population, types of disability, year of publication, ages covered, collection of data and types of analysis. A complete list and descriptors of the studies included in the systematic review is presented in Table 3.1.1. Among the 14 revised studies, one study was conducted in Malaysia, one in Israel, one in Sweden, one in the Netherlands, one in Korea, two in South Africa, two in Canada, four in the United States, and one was a review of worldwide literature on the subject. The list of the country of origin of the research is presented in Table 3.1.1.

Table 3.1.1. The complete list of the studies analysed in the systematic review.

#	Authors/ Reference	Country	Study Population	Disability	Age	Data collection	Analysis	Year
1	*Ang et al.*	Malaysia	Heads of integration programs for SE students	Learning disabilities	Middle-school students	National survey	Factor analysis	2016
2	*Barnard-Brak et al.*	United States	Approx. 5000 disabled youths, with and without intellectual disabilities	Intellectual disability	Youths (average age of 15)	Longitudinal quantitative study	Chi square	2014
3	*Chirawu et al.*	South Africa	SE teachers	Various disabilities	Not mentioned	Questionnaires	Correlation	2014
4	*East et al.*	Canada	Disabled adolescents, parents, doctors and teachers	Physical disabilities	Adolescents	Interviews and focus groups	Narrative qualitative study	2014
5	*Esmail, Darry et al.*	Canada	Visibly and non-visibly disabled, caregivers,	Various visible and non-visible disabilities	All ages, primarily adults	Interviews and focus groups	Narrative qualitative study	2010

			general public					
6	*Kim et al.*	Korea	SE and regular education teachers	Intellectual disability as well as non-disabled children	Elementary school to high school	Experimental array, different questionnaires pre & post being manipulated	Analysis of variance	2009
7	*Löfgren-Mårtenson et al.*	Sweden	Youths aged 16-21	Intellectual disability	16-21	Interviews	Content analysis	2012
8	*McDaniels et al.*	United States	Literature Review	Intellectual disability	Literature Review	Literature Review	Literature Review	2016
9	*Minch*	United States	SE teachers	Development disability	High-school	Mixed methods (quantitative & qualitative)	Factor analysis and frequency	2011
10	*Manor-Binyamini et al.*	Israel	SE school	Intellectual disability	12-21	Educational experiment	Educational experiment	2013
11	*Rohleder*	South Africa	Educators who provide SHE for disabled students	Learning disabilities	Adolescents and young adults	Interviews	Narrative qualitative study	2010
12	*Schaafsma, Kok et al*	Netherlands	Caregivers	Intellectual disability	Age 12 and up	Online questionnaires	correlation	2014
13	*Sinclair et al.*	Literature Review	Literature Review	Developmental or intellectual disability	Literature Review	Literature Review	Literature Review	2015
14	*Wilkenfeld et al.*	United States	Teachers and guides in a center for adults with learning disabilities	Developmental disability	Adolescents and young adults	Structured interviews	Qualitative study, content analysis	2011

Research question 1: *What challenges may teachers and professionals encounter when teaching SHE programs in SE?*

It was found that several studies reviewed in this systematic literature review examined the challenges teachers and caregivers may encounter when teaching sex education in SE frameworks

Problem 1: Lack of adequate training in sexual education for populations with disabilities and special needs
One of the factors that teachers and professionals related to with regards to the challenges they encountered when required to teach SHE programs in SE, was the lack of training. The teachers expressed feeling increased comfort with teaching SHE in the SE framework once that had been exposed to some form of structured training for teaching SHE (Kim, 2009; Chirawu et al., 2014; East and Orchard, 2014).

Problem 2: Concerns of educators and caregivers of possible damage in teaching sex education to people with disabilities.

Some educators seemed to be ambivalent in their feelings about SHE for people with disabilities. Their concern stemmed from the worry about the possible harm that discussing sexual issues may have on the special populations (Wilkenfeld and Ballan, 2011; Rohleder, 2010; Minch, 2011). The SE population is at high risk of sexual exploitation or of unintentional sexual behaviour (Minch, 2011). At the same time, it is a population that presents a complex and challenging SHE task for teachers and caregivers, even more so than teaching sex education in regular frameworks.

Problem 3: Embarrassment or discomfort of educators and caregivers when teaching sexual education to people with disabilities.

The current review provides examples of studies that examined SE teachers and caregivers who do indeed feel awkward when they are required to teach SHE to populations with special needs. Their embarrassment relates to teaching certain content of the SHE framework to populations with special needs (Minch, 2011; Chirawu et al., 2014). The embarrassment that exists towards sexuality in the SE population remains to be addressed by means of appropriate education and training, while bringing the topics to the forefront of educators' conversation.

Research question 2: What components are meaningful to students and teachers and should be included in potential sexual education programs in SE Frameworks?

The studies in this literature review dealt directly with the question of what content and components are lacking in existing sexual education programs (table 3.1.3). Every significant component of such a program should be mapped as a potentially important component. Of the reviewed studies which examined the attitudes of teachers towards people with special needs, four studies pointed out the need to teach contents such as personal hygiene and the prevention of health hazards (Ang and Lee, 2016; Chirawu et al., 2014; Löfgren-Mårtenson, 2012). Another component identified in three studies is the issue of sexual harassment and sexual exploitation (Minch, 2011; McDaniels and Fleming, 2016). This is also the focus of the sole existing SHE program for SE found in the current survey (Manor-Binyamini et al. Al., 2013). Another component that appeared in two studies, that has been identified as lacking, is the provision of tools for appropriate interpersonal and social communication, with an emphasis on romantic relationships (Sinclair et al., 2015; Minch, 2011). An additional component identified in one study is the lack of the physical impact of disability on sexuality (Esmail et al., 2010).

Table 3.1.3. Significant components of Potential Sexual Education programs in SE.

The components
Personal sexual hygiene and the prevention of diseases and medical hazards.
Prevention of sexual harassment and exploitation.
Appropriate interpersonal and social communication, with an emphasis on romantic relationships.
The physical impact of disability on sexuality.

3.1.4 Discussions, conclusions and limits

The systematic literature review shows that, with the exception of a few scant programs, there are almost no formal programs for teaching SHE to special needs populations. The review reveals an urgent need for formal SHE programs for students with special needs exists (Barnard-Brak, Schmidt, Chesnut, Wei & Richman, 2014). The findings also showed that there are almost no formal sex education programs for teachers for SE (Barnard-Brak, Schmidt, Chesnut, Wei & Richman, 2014). Teachers mentioned that they felt that they lacked suitable training. Some teachers and professionals expressed their concerns about possible harm that may be caused in teaching SHE to people with special needs. Furthermore, many of the teachers and educators discussed their embarrassment and discomfort when teaching sexual education to people with special needs.

The systematic review found four main challenges that teachers and professionals encounter when teaching SHE in SE frameworks: 1) Personal sexual hygiene and the prevention of diseases and medical hazards, 2) Prevention of sexual harassment and exploitation 3) Appropriate interpersonal and social communication, with an emphasis on romantic relationships 4) The physical impact of disability on sexuality. While the special importance of providing SHE to student with special needs has become apparent, it appears that there are several factors that may make the provision of sex education to these populations particularly challenging for the teachers and caregivers. One of the challenges expressed by the teachers is their perception that they lack training in the subject. Some teachers expressed their belief that they do not have the capabilities to teach SHE to special needs students. The low proportion of articles specific to SHE in SE amongst multiple articles relating to sex education may perhaps be a reflection of the limited research that is being conducted on the provision of SHE in SE frameworks. Since teachers expressed the need for appropriate training to be able to provide SHE to special needs students, more research is needed to examine the outcomes of programs which provided training to teachers in SHE for special needs students. Investigation of the psycho-social effects that SHE programs have on the special needs students could provide insight into the manner in which SHE programs appropriately fulfil the needs of the students.

3.2 Study 2. Pilot Study: Development and validation of the KASHED questionnaires regarding sexual health training program for Special Education pre-service teachers – Pilot study

3.2.1 Introduction

A study conducted by Brosch (2007), investigated the attitudes, knowledge and willingness of PSTs to address the topics connected to sex and family life education as part of their teaching tasks. A questionnaire was developed for the study that included demographical information, recollection of personal SHE in school, SHE today (in the school they work at) and a short knowledge questionnaire with items from the topic of anatomy and physiology (Brosch, 2007). Besides Brosch's questionnaire, two other valid questionnaires were chosen for this pilot test, as follows: (1) Reuth Open Door – IFPA's (Israel Family Planning Association) Attitudes questionnaire on Sexuality and Disabilities, Developed by Porat (Porat, 2009), and (2) Attitudes toward Sexuality Scale (ATSS), developed by Fisher, Davis, Yarber, & Davis (2011). Since no specific questionnaire on the topic of SHE for SE PSTs was found in English or in Hebrew, after consultation with an expert panel, some items in the questionnaires related to the context of SE were added to Brosch's questionnaire (2007) and to the Fisher et al. (2011) Attitudes Toward Sexuality Scale.

The goal of the pilot study was to validate these questionnaires and adapt them together into one package of questionnaires, the KASHED (Knowledge and Attitudes to Sexual Health Education and Disability) questionnaire for further usage in the process of assessment of the outcomes of SHE programs for pre-service teachers in Israel working with students with special needs.

3.2.2 Methodology

The methodology used in the study in order to construct and validate the KASHED questionnaire included a pilot study, and a reconstruction of the questionnaire, according to findings of the validation process.

Questionnaire construction

The questionnaire included adapted questions from several questionnaires: Demographic and Sexual Education Questionnaire (Brosch, 2007), Attitudes about Sexuality for People with Disabilities (Porat, 2009), Attitudes toward Sexuality Scale (ATSS) – (Fisher, Davis, Yarber, & Davis, 2011).

The pilot version of the KASHED questionnaire included the following information categories: Personal and demographic details, questions concerning SHE they received during a short knowledge questionnaire on the topic of anatomy and physiology, attitudes to sexuality for people with disabilities and attitudes toward sexuality in general.

Questionnaire validation

The process of validation of the questionnaire included Content-related discussions with five professional experts in order to identify themes, adaptation and translation of questions into Hebrew, questionnaire review by experts for content validation. 38 pre-service teachers were asked to fill out the questionnaire and were interviewed regarding the clarity and wording of the questions. Reliability validation and sub-scales identification were based on a pilot study which included the 5 experts and the 38 PSTs.

3.2.3 Findings

The psychometric properties of the adapted Demographic and Sexual Education Questionnaire (Brosch, 2007) forming parts A, B, C and D of the KASHED questionnaire were as follows (Table 3.2.1):
- The internal consistency of the second part of the questionnaire was .94
- The internal consistency of the third part of the questionnaire was tested based on the sub-sections of the questionnaire:
- The internal consistency for questions 16-26 was .89
- The internal consistency for question 18 was .60
- The internal consistency for question 20 was .90
- The internal consistency of the fourth part of the questionnaire was .65.

Table 3.2.1 The psychometric properties of the adapted Demographic and Sexual Education

Section	Tool	Categories	No. of Questions	Alpha-Cronbach
Brosch, 2007				
A	11 questions	demographic		
B	4 questions	participant's experience of SHE in adolescence		**α =.94**
C	11 questions	current views on SHE in SE (subsection 1)	Questions 16-26	**α =.89**
		current views on SHE in SE (subsection 2)	Question 18	**α =.60**
		current views on SHE in SE (subsection 3)	Question 20	**α =.90**

D	17 questions	knowledge of SHE topics		α =.65
Porat, 2009				
E	12 statements	attitudes about sexuality for people with disabilities	1-4 Linkerd scale	α = .85
(Fisher & Hall, 1988)				
F	16 statements	attitudes towards sexuality	1-5 Linkered scale	α = .62

3.2.4 Discussion, conclusion and limits

The results of the KASHED questionnaires revealed that PSTs lack knowledge of SHE, despite participating in SHE programs at school. This finding matched those reported by educators around the world (Girgin et al., 2017; Schaafsma et al., 2013). Despite this lack of knowledge, a large majority of PSTs (over 97%) were found to have a positive attitude towards teaching SHE in mainstream schools and within the SE sector. The findings of the pilot fitted the findings from the literature review, which showed that teachers are not confident about teaching SHE in SE without first receiving a tailored training program. Such programs were shown to improve the teachers' confidence about teaching SHE in special education settings (Kim, 2009; Chirawu et al., 2014; East and Orchard, 2014). It therefore would seem critical that SHE programs for PSTs in SE emphasize teaching caregivers and teachers how to impart this important information. The statistical analysis indicates that a reliable, valid and comprehensive package of questionnaires was prepared according to the research questions.

The second study of this PhD research contributes to the development of a questionnaire that can examine the factors related to knowledge, attitudes and capabilities of SE PSTs in relation to SHE training program. The package of the KASHED questionnaires can be further used in other countries and cultures, thereby making a methodological valuable contribution to the personal and professional development of PSTs.

3.3 Study 3: A quantitative investigation of the effects of participating in SHE training on the attitudes, knowledge and willingness to teach SHE of PSTs in Israel

3.3.1 Introduction

Evidence points to the importance of training programs for teachers intending to deliver SHE within mainstream education (Arrington et al., 2018; Leung et al., 2019; McKay & Barrett, 1999) and in SE (Owens, 2014; Thorpe & Oakes, 2019; Treacy et al., 2018). However, lack of teacher preparation for to deliver SHE in general and in SE in particular has been reported as one of the obstacles preventing effective SHE for young people (Attwood, Henault, & Dubin, 2014; Goldman & Coleman, 2013; Klein & Breck, 2010; May & Kundert, 1996; Wilkenfeld & Ballan, 2011; Travers et al., 2014). It has been found that the beliefs and cognitions of PSTs and in-service teachers as well as their knowledge and technical skills strongly affect not only what they teach when delivering SHE but also how effectively they teach (Barnard-Brak et al., 2014; Howard-Barr et al., 2005; Thorpe & Oakes, 2019). It is therefore critically important that SHE training program is given to PSTs, and that this training is assessed for its psycho-social effects on the PSTs. Cultural backgrounds and religious beliefs have been shown to affect PSTs pre-existing knowledge, training and perceptions regarding SHE in general and in SE (Lapidot Berman & Firstater, 2018). It is therefore important that these factors be assessed in groups undergoing SHE training program so that the

course can be adapted accordingly, as it is possible that different levels of training will be needed amongst different demographic groups. SHE training programs are rooted in theories related to cognitive theory (Lewin, 1951); the transtheoretical model (Procaska et al., 1994) the health belief model (Abraham & Sheeran, 2005; Rosenstock, 1991) and health behaviour theory (Bronfenbrenner & Morris, 2007). Updated versions of these theories include an emphasis on self-efficacy, expectations, cues to action and demographic and socio-economic variables (Taylor et al., 2007). It has been found that SHE programs grounded in evidence-based theories and subjected to assessment are more successful in meeting their goals (Haberland & Rogow, 2015; Kirby, 2007). Teachers attitudes to SHE, their knowledge of SHE topics and their willingness to teach SHE in SE have all been shown to have an effect on the success of SHE programs in SE (Argaman, 2018; Cozzens, 2016; Foley, 2008; Iyer & Aggleton, 2013; Peltzer and Promtussananon, 2003).

The main aims of the third study were to quantitatively assess the differences in knowledge, attitudes and perceived capabilities to teach SHE among SE PSTs based on their age, gender, level of religiousness, general knowledge about sexuality, personal status and teaching experience (pre-test), and to analyze the contribution of the SHE training program for SE PSTs on their knowledge, attitudes and capability to teach SHE (post-test).

3.3.2 Research Methodology

Participants to this study were 179 Israeli SE PSTs, who attended colleges and teaching seminars during 2017-2018. All the participants were native Israelis, with Jewish religion orientation. The 'experimental' group included 128 students who intended to take part in an SHE training program later on in the academic year. The 'control' group consisted of 51 students, which were not intending to take part in the training program.

Instruments - KASHED (Knowledge and Attitudes to SHE and Disability) questionnaires were distributed to the PSTs.

3.3.3 Research Findings

Demographic data psycho-social variables of the two groups

The findings below relate to the variables assessed with the KASHED package of questionnaires distributed before the new course on SHE for PSTs. In the Pre-test condition there is therefore only one time point, with two groups: experimental group and control group. In order to examine whether there are significant differences between the two groups (experiment, control) in the demographic characteristic, Chi square (χ^2) analyses were conducted (Table 3.3.1)

Table 3.3.1 Frequency (%) of the demographic characteristics of the participants to the two groups in the pre-test phase.

Demographic characteristics	Values	Experiment (*n* = 128)	Control (*n* = 51)	χ^2	*p*
In which year of college studies are you?	First	4 (3.1%)	4 (7.8%)		
	Second	14 (10.9%)	9 (17.6%)		
	Third	69 (53.9%)	23 (45.1%)		
	Fourth	41 (32%)	15 (29.4%)	3.72	.29
	No	89 (69.5%)	40 (78.4%)		

Are you currently working as a teacher?	Yes	39 (30.5%)	11 (21.6%)	1.44	.23
Gender	Male	6 (4.7%)	3 (5.9%)		
	Female	122 (95.3%)	48 (94.1%)	.11	.74
Your marital status	Single	61 (47.7%)	33 (64.7%)		
	Living with a stable partner	14 (10.9%)	3 (5.9%)		
	Married	50 (39.1%)	14 (27.5%)		
	Divorced or separated	3 (2.3%)	(2.0%)1	4.40	.22
Do you have children	No	89 (69.5%)	40 (78.4%)		
	Yes	39 (30.5%)	11 (21.6%)	1.43	.23
Level of religiousness	Secular	59 (46.1%)	20 (39.2%)		
	Traditional	19 (14.8%)	11 (21.6%)		
	Religious	50 (39.1%)	20 (39.2%)	1.37	.50

No significant differences were found between the two groups in the demographic characteristics.

3.3.3.1 Experiences during the childhood/adolescence of the two groups

Section B of the KASHED package of questionnaire contained questions that referred to the PST's childhood / adolescence period in relation to SHE. In order to examine whether there are significant differences between the two groups in the responses for the questions engaging SHE and information throughout childhood, Chi square (χ^2) analyses were conducted. No significant differences were found between the two groups in their responses to the questions regarding their own SHE and the information they received during childhood.

3.3.3.2 Current stances of PSTs in the two groups

Section C part of the KASHED package of questionnaires contained questions that referred to the stances of the pre-service teachers today regarding sexual education in school. In order to examine whether there are significant differences between the two groups in the responses for the questions addressing attitudes today regarding to sexual education, Chi square (χ^2) analyses were conducted. No significant differences were found in the pre-test phase between the two groups in the responses to the questions addressing the PSTs attitudes today regarding SHE.

In order to examine whether differences would be found in the level of essentialness perceived in learning the five topics, we performed one-way ANOVA with repeated measures. The independent variable was the five topics and the dependent variable was the level of essentialness. The topic: "where do babies come from?" has lower level of essentialness compared to the other four topics in both groups ($F_{(4,17)} = 7.07$, $p < .001$, $\eta_p^2 = .62$ in the control group and $F(4,49) = 21.48$, $p < .001$, $\eta_p^2 = .64$ in the experiment group).

The PSTs were also asked to indicate the most important topic between the five SHE topics. In order to examine whether there are significant differences between the two groups in the percentages of pre-service teachers who thought that each one of the SHE topics were most important at early ages, Chi square (χ^2) analyses were conducted. In the pre-test phase, no significant differences were found between the two groups in the percentages of pre-service teachers who thought that each one of the sexual topics were most important at early ages.

The 179 PSTs were asked to rank the level of essentialness in addressing a certain topic during adolescence. No significant differences between the two groups were found in the level of agreement toward the essentialness in addressing the 22 topics during adolescence.

In regard to the question: "Do you think that school teachers should address the mentioned topics", 170 (95%) of PSTs stated that it is the school's role to address these important topics (96.1% in the experimental group and 92.2% in the control group, with no significant differences between the two groups $\chi^2(1) = 1.18$, $p = .28$). The PST's were found to think that it is mostly the home room teachers and the guidance counsellor's role to teach SHE rather than the biology teacher or other teachers in the school. Also, a high percentage of the PST's said that they will be willing to deal with SHE once they get appropriate training.

The PSTs were asked to point out the SHE topics about which they would like to receive more information. Both groups indicated that they wish to receive more information. The PSTs were also asked about the SHE topics they had previously studied at college. Just under a quarter (24%) of PSTs had studied SHE topics extensively (27.3% in the experimental group and 15.7% in the control group, with no significant differences between the two groups $\chi^2(1) = 2.71$, $p = .10$).

3.3.3.3 PST's Knowledge of SHE topics in the two groups – before the SHE training program

In section D of the KASHED questionnaire, the PSTs were asked to offer answers to 17 items regarding their knowledge in topics such as anatomy and physiology of reproductive organs, abortions, sexual orientations and sexual violence.

In order to examine whether significant differences would be found between the two groups in sexual health knowledge, t-test for two independent samples was conducted. The independent variable was the study group (experiment, control) and the dependent variable was the level of sexual health knowledge. No significant differences in sexual health knowledge were found between the two study groups, $t(177) = -1.15$, $p = .25$.

3.3.3.4 Findings relating to the attitudes of both groups of the PSTs to sexuality and disability before their participation in the course

The pre-service teachers responded to the 12 statements in the fifth section of the KASHED package of questionnaires, which assessed *attitudes* towards sexuality and disability.

Table 3.3.2 Mean values, SD and range of the level of agreement with the statements regarding attitudes towards sexuality and disability by group.

	Experiment (*n* = 128)		Control (*n* = 51)				
Sexuality subjects	*M*	*SD*	*M*	*SD*	*t*	*p*	*Cohen's d*
1. People with a disability have the same sexual needs as those with no disability	3.54	0.59	3.33	0.68	-2.02*	.05	0.33
2. People with a disability don't have "real" sex	3.47	0.68	2.47	0.99	-6.63***	.00	1.18
3. People with a disability are less exploited than those with no disability	3.46	0.72	2.49	1.08	-5.90***	.00	1.06
4. People with a disability don't have spontaneous sex	2.96	0.73	2.47	0.90	-3.46***	.00	0.60

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5. People with a disability have more important issues to see to than sexual relations	3.16	0.65	2.57	0.98	-3.94***	.00	0.71
6. Parents and professionals believe most young people with a disability don't need SHE.	2.77	0.89	2.45	1.03	-2.09*	.04	0.33
7. Young people with a disability need an explanation about birth control	3.62	0.56	3.37	0.72	-2.42*	.02	0.39
8. Everyone has the right to exercise his or her sexual potential regardless of their physical or mental condition	3.52	0.71	3.61	0.60	.75	.45	0.14
9. It is better not to talk about sexuality with young people with disabilities so as to "not to let extra ideas into their heads"	3.63	0.50	2.37	1.17	-7.45***	.00	1.40
10. People with a disability have the same libido as those with no disability	3.60	0.57	3.33	0.65	-2.74**	.01	0.44
11. If a person with a disability has sexual problems, it is almost always because of his disability	3.21	0.68	2.57	0.96	-4.34***	.00	0.77
12. Sex is good only if you can "go all the way"	3.35	0.67	2.69	1.14	-3.91***	.00	0.71
Total	3.36	0.34	2.82	0.53	-6.62***	.00	0.72

As table 3.3.2 shows, in all questions except one (no. 8) *Everyone has the right to exercise his or her sexual potential regardless of their physical or mental condition,* the experimental group had a higher scale

3.3.4 Research findings regarding the differences between pre- and post-administration of the SHE Training Program.

Following the analysis of the findings from the PSTs experimental and control groups, referred to here as the pre-test, the survey was repeated about four months later after the experiment group had participated in a SHE training program.. Prior to conducting the analyses, we examined whether the dependent variables are normally distributed by conducting Shapiro-Wilk tests. The results indicated that some of the dependent variables are not normally distributed ($p < .05$). Therefore, we examined the study questions and hypotheses by conducting parametric (Mixed ANOVA analyses or ANCOVA analyses) and non-parametric tests (Wilcoxon and McNemar tests). The majority of the findings of non-parametric analyses matched the findings of the parametric analyses. Therefore, we presented the findings of the results of the parametric analyses, instead of presenting the non-parametric analyses. The Wilcoxon test analyses examined the differences between the two time points (before and after the SHE training program) in each group, separately. The McNemar test analyses were used to determine whether there are differences between the two time points on the dichotomous dependent variables in each group, separately. Furthermore, before conducting the two-way Mixed ANOVA analyses, Mauchly's tests of Sphericity were conducted in order

to examine the Sphericity assumption. When the test results of the Mauchly's tests were significant, we reported the adjustment results from the Greenhouse-Geisser test.

3.3.4.1 Current stances of the PSTs on SHE topics

This part of the results section examined the differences in the scores on the questions that referred to the stances of the PSTs today regarding SHE in school. Two questions that referred to the stances of the PSTs today regarding sexual education were at ordinal scales;

- *"Do you think it is important to have lessons regarding SHE in SE within the school curriculum?*
- *"In your opinion, at what age/grade should you start talking about the topic of sexuality?"*

In order to examine the differences between the two time points in each group separately, Wilcoxon tests were conducted. While there were significant differences between the two time points (before and after the SHE training program) in the two questions that referred to the stances of the PST's attitudes regarding SHE in the experimental group, no significant differences were found in the control group, who had not taken part in the program.

Regarding the question *"In which population is the teaching of SHE the most important",* above 90% of the PSTs stated that SHE must be learned in both regular and SE before and after the SHE training program (Experimental: 93.8% before and 96.1% after the SHE training program, Control: 94.1% before and 92.2% after the SHE training program).

The 113 PST's who replied "at the kindergarten" or "at the lower grades of elementary school" to the question: "*in your opinion, at what age/grade should you start talking about the topic of sexuality*" were asked to rank the level of essentialness perceived in learning various sexual topics at early ages. In order to examine whether there are significant differences between the two groups in the level of essentialness perceived in learning sexual topics at early ages <u>after the SHE training program</u>, t-test analysis for two independent samples was conducted. No significant differences between the two study groups were found in the level of essentialness, $t(111) = .94$, $p = .35$. The level of essentialness perceived in learning sexual topics in the control group ($M = 4.51$, $SD = 0.42$) was not significantly different compared to the experiment group ($M = 4.39$, $SD = 0.49$).

The results indicated that while significant differences between the two time points were found in the level of essentialness perceived in learning sexual topics in the experimental group $t(45) = -2.45$, $p < .05$, no significant differences were found in the control group $t(13) = 1.26$, $p = .23$. The level of essentialness perceived in learning sexual topics among the PST's in the experimental group were higher after the SHE training program ($M = 4.51$, $SD = 0.47$) compared to before the SHE training program ($M = 4.28$, $SD = 0.56$). No significant differences were found in the level of essentialness perceived in learning sexual topics after the SHE training program ($M = 4.49$, $SD = 0.44$) compared to before the SHE training program ($M = 4.61$ $SD = 0.31$) among the PST's in the control group (see Figure 3.3.1).
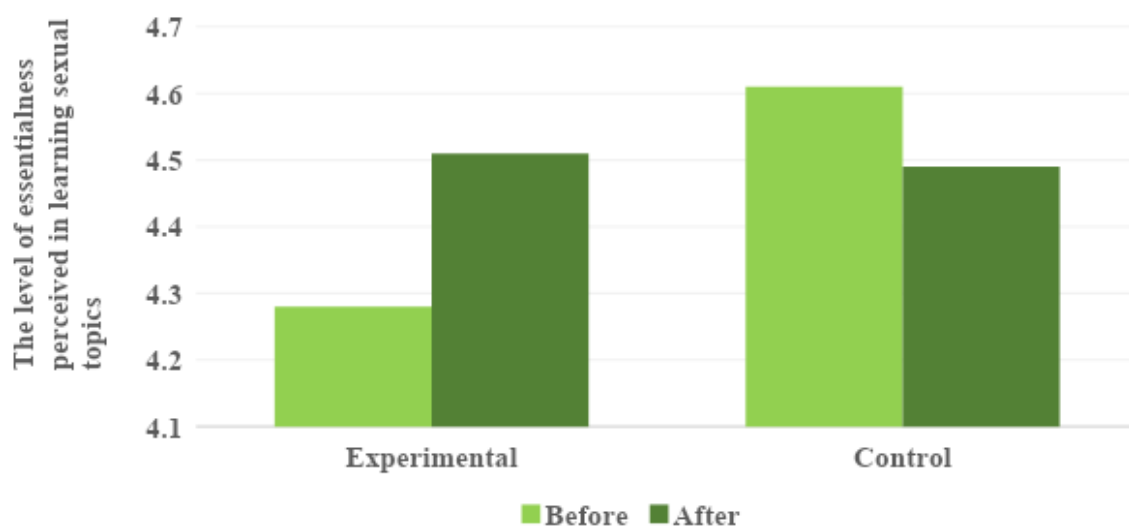
Figure 3.3.1 The level of essentialness perceived for learning sexual topics before and after the SHE training program in both groups.

The 179 PSTs were requested to rank the level of essentialness in addressing a certain topic during adolescence. In order to examine whether there are significant differences between the two time points and the two study groups in the level of essentialness perceived in addressing a certain topic during adolescence, two-way Mixed ANOVA analysis was conducted. The time point was the within subject factor and the grouping variable was the between subject factor.

The main effects of time point, $F(1,177) = .00$, $p = .95$, $\eta_p^2 = .00$ and the study group, $F(1,177) = 2.90$, $p = .09$, $\eta_p^2 = .02$ were not significant. On the contrary, significant interaction was found between time and group, $F(1,177) = 4.77$, $p < .05$, $\eta_p^2 = .03$. Bonferroni analyses comparing the two time points in each study group indicated that while significant differences between the two time points were found in the level of essentialness in addressing a certain topic during adolescence in the experimental group ($p < .05$), no significant differences were found in the control group ($p = .19$, $M = 4.35$, $SD = 0.47$ before the SHE training program and $M = 4.38$, $SD = 0.54$ after the SHE training program). The level of essentialness in addressing a certain topic during adolescence in the experimental group was significantly higher after the SHE training program compared to before the SHE training program ($M = 4.25$, $SD = 0.60$ before the SHE training program and $M = 4.47$, $SD = 0.44$ after the SHE training program) (Figure 3.3.2).
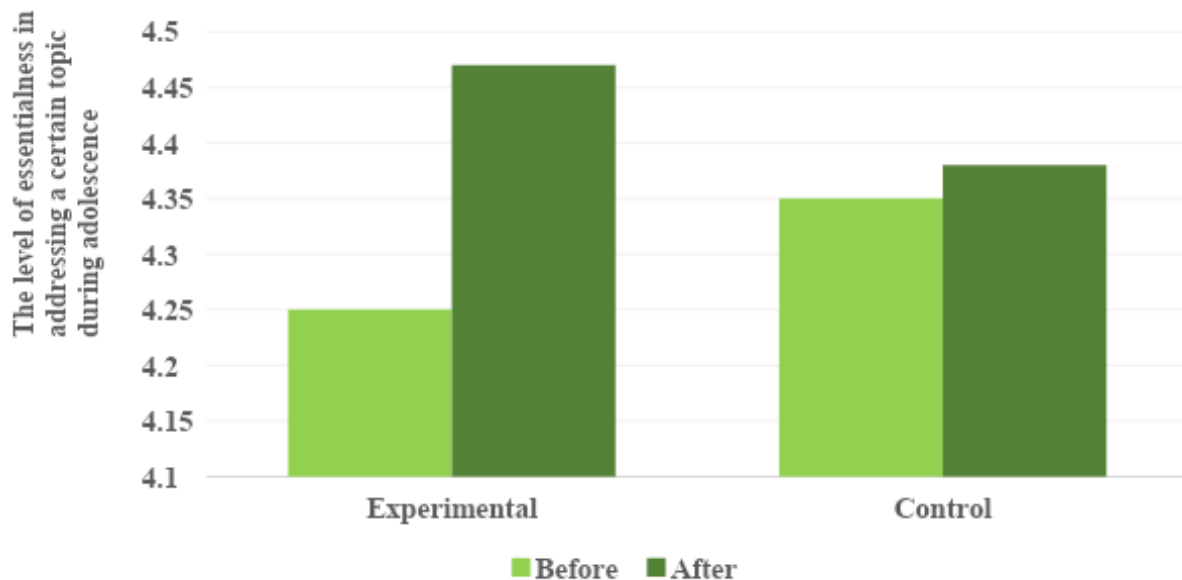
Figure 3.3.2. The level of essentialness perceived in addressing a sexual topic during adolescence before and after the SHE training program in both groups.

In order to examine in which of the sexual topics there were significant differences in the level of perceived essentialness among the PSTs in the experimental group, paired sample t-test analyses were conducted. The level of perceived essentialness of addressing the following sexual topics during adolescence was significantly higher in the experimental groups after the SHE training program compared to before the SHE training program:

- *Sexuality and disability – attitudes, definitions, rights*
- *Developmental changes during puberty*
- *Body image and eating disorders in adolescence*
- *Sexual intercourse during adolescence*
- *Sexual abuse, sexual violence and rape*
- *Privacy, personal space and social distances*

In regard to the question: *"Do you think that school teachers should address the mentioned topics"*, 176 (98.3%) of PSTs stated that it is the school's role to address these important topics (100% in the experimental group and 94.1% in the control group), with significant differences between the two groups $\chi^2(1) = 7.66$, $p < .01$.

3.3.4.2 Differences in the level of knowledge of PST's in topics related to sexual education

In the second part of the questionnaire, the PSTs were requested to provide answers to 17 items regarding their knowledge in topics such as anatomy and physiology of reproductive organs, abortions, sexual orientations and sexual violence. In order to examine whether there are significant differences between the two time points and the two study groups in the level of knowledge in topics related to SHE, two-way Mixed ANOVA analysis was conducted. The time point was the within subject factor and the grouping variable was the between subject factor.

The main effect of time point, $F(1,177) = 3.95$, $p < .05$, $\eta_p^2 = .02$ was significant, indicating higher level of knowledge in topics related to SHE after the SHE training program compared to before the SHE training program. The main effect of the study group was also significant, $F(1,177) = 14.66$, $p < .001$, $\eta_p^2 = .08$, indicating higher level of knowledge in topics related to SHE among the experimental group compared to the control group. Finally, significant interaction was found between time and group, $F(1,177) = 4.45$, $p < .05$, $\eta_p^2 = .03$. Bonferroni analyses comparing the two time points in each study group indicated that while significant differences between the two time points were found in the level of knowledge in topics related to SHE in the experimental group ($p < .001$), no significant differences were found in the control group ($p = .94$, $M = 7.22$, $SD = 3.41$ before the SHE training program and $M = 7.18$, $SD = 3.00$ after the SHE training program). The level of knowledge in topics related to SHE in the experimental group was significantly higher after the SHE training program compared to before the SHE training program ($M = 7.80$, $SD = 2.91$ before the SHE training program and $M = 9.11$, $SD = 2.19$ after the SHE training program) (see Figure 3.3.3).
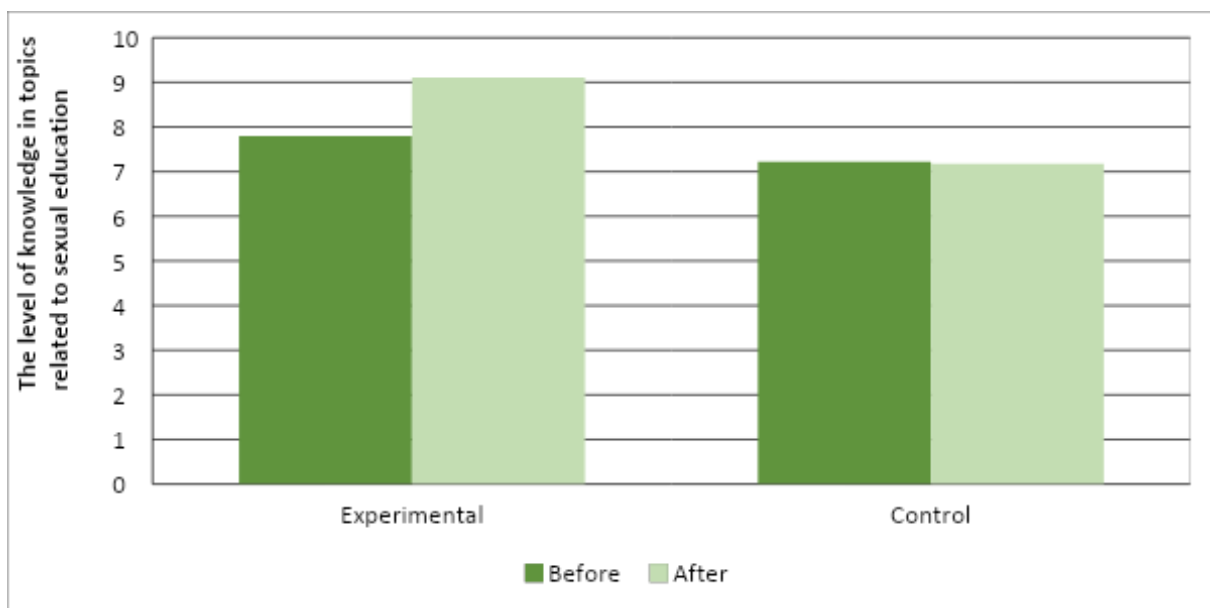
Figure 3.3.3 The level of knowledge in topics related to sexual education at the two time points before and after the dates of the training program in both groups.

In order to examine in which of the certain topics there were significant differences in the level of knowledge among the PST's in the experimental group, McNemar analyses were conducted.

The results of the McNemar tests revealed significant differences between the two time points among the PST's in the experimental group in the five questions:

- *A girl can undergo a legal abortion in Israel, without her parents' consent*
- *The function of the man's prostate gland is to…*
- *At present, there are more women than men who are infected with AIDS*
- *One way to contract Hepatitis B is through sexual intercourse*
- *Homosexuality is defined today by psychiatrists and psychologists as a mental illness*

The results indicated that the rate of the correct answers were significantly greater after the SHE training program in comparison to that from before the SHE training program.

3.3.4.3 Differences in the factors "attitudes questionnaire on sexuality and disability" and the "attitudes towards sexuality"

In the third section of the questionnaires, the PSTs answered the 12 items in the attitudes' questionnaire of sexuality and disability and the 16 items on the attitudes' questionnaire towards sexuality. Significant differences were found between the two study groups before the SHE training program in both questionnaires ($p < .001$). In order to examine whether there are significant differences between the two study groups in the attitudes towards sexuality and disability and the attitudes towards sexuality after the SHE training program, one-way ANCOVA analyses were conducted. The independent variable was the grouping variable and the attitudes of the PST's in the two questionnaires before the SHE training program were the covariate variables. The dependent variables were the attitudes of the PSTs in the two questionnaires after the SHE training program.

Significant differences between the two study groups were found in the attitudes towards sexuality and disability after the SHE training program, $F(1,174) = 16.02$, $p < .001$, $\eta_p^2 = .08$, indicating more positive attitudes towards sexuality and disability in the experimental compared to the control group. The effect of the covariate variable, the attitudes towards sexuality and disability before the SHE training program, was significant, $F(1,174) = 66.29$, $p < .001$, $\eta_p^2 = .28$.

Significant differences between the two study groups were also found in the attitudes towards sexuality after the SHE training program, $F(1,175) = 5.15$, $p < .05$, $\eta_p^2 = .03$, indicating more positive attitudes towards sexuality in the experimental compared to the control group. The effect of the covariate variable, the attitudes towards sexuality before the SHE training program, was significant, $F(1,175) = 91.73$, $p < .001$, $\eta_p^2 = .34$.

The differences in attitudes towards sexuality and in attitudes towards sexuality and disability between the two groups before the SHE training program are summarized in the table below (table 3.3.3).

Table 3.3.3 Mean, SD and M.E of the two questionnaires: attitudes towards sexuality and disability and the attitude towards sexuality questionnaire after the SHE training program by group.

The name of the questionnaire	*Experiment (n = 128)*			*Control (n = 51)*		
	M	*SD*	*M.E*	*M*	*SD*	*M.E*
Attitudes towards sexuality and disability	3.45	0.31	3.37	2.88	0.60	3.09
Attitude towards sexuality questionnaire	3.71	0.59	3.63	3.24	0.66	3.43

In order to examine in which of the certain 12 items on the attitudes' questionnaire of sexuality and disability and in which of the 16 items on the attitudes towards sexuality questionnaire significant differences were found between the two time points in the experimental group, paired sample t-test analyses were conducted.

3.3.4.4. Influence of PSTs' Backgrounds characteristics on the psycho-social impact of SHE training program

The variable background characteristics were the PSTs' gender, marital status (single or divorced, married or with a stable partner), year of college studies, age, level of religiousness, working as a teacher, children (no, yes), group (control, experiment) and their father's and mother's years of study.

Gender differences - No significant differences were found between males and females in all of the dependent variables.

Working as a teacher - No significant differences were found between PSTs full time students who do not work as teachers and PSTs who work as teachers in the other five dependent variables.

Marital status - A significant difference was found between PSTs who were not in a relationship and PSTs who were in a relationship in their attitudes towards sexuality and disability before the SHE training program [$t(177) = -3.08$, $p < .01$]. This result indicated that the PSTs who were not in a relationship possess less positive attitudes towards sexuality and disability before the SHE training program. No significant differences were found between the two marital status groups in the other five dependent variables.

Parental status (children) - No significant differences were found between PSTs who did not have children and PSTs who have children in all of the dependent variables.

Religiosity - ANOVA analyses were conducted on the level of sexual knowledge before the SHE training program and on the level of change between the two time points in this variable. Three levels of religiosity were used: secular, traditional and religious (or orthodox). All of the PSTs in the sample were of Jewish backgrounds, but with different levels of practice and belief. MANOVA analyses were conducted on the attitudes towards sexuality and disability and the attitudes towards sexuality before the SHE training program and on the level of change between the two time points in these variables.

Table 3.3.4 Mean values, SD and t values of the level of knowledge, the attitudes towards sexuality and disability and the attitudes towards sexuality before the SHE training program and the level of changes between the two time points by level of religiousness.

Dependent variables	Secular (n = 10)		Traditional (n = 10)		Religious (n = 10)				
	M	SD	M	SD	M	SD	F	p	η_p^2
Before the SHE training program									
Level of knowledge	8.80	2.95	8.30	2.78	6.03	2.60	19.30***	.00	.18
Attitudes towards sexuality and disability	3.22	0.54	3.17	0.48	3.19	0.36	.15	.86	.00
Attitudes towards sexuality	3.97	0.53	3.84	0.56	3.23	0.57	35.71***	.00	.29
Changes between the two time points									

Level of knowledge	0.01	3.93	-0.10	3.92	2.40	3.44	8.90***	.00	.09
Attitudes towards sexuality and disability	0.04	0.40	0.12	0.36	0.10	0.40	.76	.47	.01
Attitudes towards sexuality	-0.17	0.51	-0.12	0.52	0.02	0.62	2.37	.10	.03

***$p < .001$**

As Table 3.3.4 shows, the level of knowledge and attitudes in the <u>religious</u> group was seen to be lower before the SHE training program than in both the secular and traditional groups (Scheffe post-hoc analyses).

Age, parental education and year of college studies - In order to examine the correlation between the age of the participant and the years of his parents' education and the dependent variables, Pearson correlations analyses were conducted. In order to examine the correlation between the year of the participant's college studies and the dependent variables, Spearman correlations were conducted. A positive correlation was found between the level of sexual knowledge and the attitudes towards sexuality and the age of the participant, indicating that as the age of the participant increases, the level of sexual knowledge is greater and there is a more positive attitude is possessed towards sexuality. No significant correlations were found between the parents' education and the year of the participant's college studies and the dependent variables.

The contribution of the background characteristics and the grouping variable to the psycho-social impact of SHE Training Program

Three multiple regression analyses were conducted in order to examine the contribution of the PST's background characteristics to their level of knowledge of topics related to SHE, the attitudes towards sexuality and disability and the attitudes towards sexuality <u>before the SHE training program</u> and an additional three regression analyses were conducted in order to examine the contribution of the PST's background characteristic to the level of knowledge of topics related to SHE, the attitudes towards sexuality and disability and the attitudes towards sexuality <u>after the SHE training program</u>. The independent variables were entered in a stepwise manner. The only variables that contributed significantly to the explained variance were entered into the equation.

Table 3.3.3.5 shows the results of the multiple regressions for the knowledge in topics related to SHE the attitudes towards sexuality and disability and the attitudes towards sexuality by the background characteristics of the PST after the SHE training program.

Table 3.3.5 Multiple regressions for the variables knowledge in topics related to SHE, the attitudes towards sexuality and disability and the attitudes towards sexuality by the background characteristics of the PST before the SHE training program.

Dependent variables	Steps	Independent variables	B	$SE.B$	β	t	R^2	ΔR^2
Sexual knowledge	1	**Religious**	-1.36	.24	-.41	-5.68***	.172***	.172***
Attitudes to sexuality and disability	1	**Marital status**	.19	.07	.21	2.66**	.044**	.044**

Attitudes towards sexuality	1	Religious	-.37	.05	-.52	-7.66***	.275***	.275***
	2	Religious	-.33	.05	-.47	-6.65***		
		Age	.01	.01	.16	2.25*	.298***	.023*
	3	Religious	-.29	.05	-.41	-5.53***		
		Age	.03	.01	.30	3.19**		
		Children	-.28	.13	-.20	-2.24*	.320***	.022*
	4	Religious	-.29	.05	-.41	-5.57***		
		Age	.03	.01	.29	3.13**		
		Children	-.42	.14	-.29	-2.94**		
		Marital status	.21	.11	.17	2.01*	.338***	.018*

$*p < .05, **p < .01, ***p < .001$

As Table 3.3.5 shows, the **level of religiousness** - The negative β coefficient indicated that, before the SHE training program, the knowledge in topics related to sexual education was greater and the attitudes towards sexuality were more positive among secular PST's compared to religious PST's.

The **marital status** - The positive β coefficient indicated that the attitudes towards sexuality and disability and the attitudes towards sexuality were more positive among married PSTs or those with a stable partner compared to single or divorce PSTs.

The **age** of the PSTs contributed significantly to the EPV of the attitudes towards sexuality before the SHE training program with a positive β coefficient, indicating that as the age increases, the attitudes towards sexuality become more positive. Finally, the negative β coefficient of the "children" variable indicated that PSTs without children had a more positive attitude towards sexuality compared to PST's with children.

Table 3.3.6 Results of multiple regressions for knowledge of topics related to SHE, the attitudes towards sexuality and disability and the attitudes towards sexuality by the background characteristics of the PSTs after the SHE program.

Dependent variables	Steps	Independent variables	B	$SE.B$	β	t	R^2	ΔR^2
Sexual knowledge	1	Group	2.11	.42	.37	5.03***	.140***	.140***
Attitudes to sexuality and disability	1	Group	.57	.07	.53	7.81***	.283***	.283***
	2	Group	.55	.07	.51	7.50***		
		Marital status	.13	.06	.14	1.99*	.301***	.018*
Attitudes towards	1	Religious	-.28	.05	-.40	-5.43***	.160***	.160***

31

sexuality	**2**	**Religious**	-.27	.05	-.38	-5.44***		
		Group	.47	.10	.32	4.58***	.261***	.101***

*p < .05, **p < .01, ***p < .001*

As Table 3.3.6 shows, the variation of knowledge of PSTs from all the different backgrounds was affected by participation in the training program.

3.3.5 Discussion, conclusions and limitations

The findings of the pre-test carried out before the SHE training program supported the first hypothesis regarding demographic factors significantly impacting the PSTs' knowledge of and attitudes towards sexual health topics. For all of the demographic variables, there was greater variance with regard to knowledge than attitudes to sexuality or disability. The answers of the participants to the 12 questions related to their attitudes to sexuality and disability, indicated significant differences in findings for the 'experimental' and 'control' groups. As the participants in the experimental group were intending to work in SE and the control group did not, these differences were not unexpected.

In terms of analysis of the impact of SHE training program on the targeted variables, the responses of the experimental group changed in relation to many questions after taking part in the SHE training program. The percentage of PSTs in the experimental group who thought including SHE lessons in the curriculum in the special needs education sector significantly rose from 76.6% to 88.3%. There was also a significant change in the age when they considered that sexuality should first be discussed. While only 22% had considered sexuality should be discussed at kindergarten level, after the training program almost 65% thought that kindergarten was a suitable time to start discussing these topics. The perceived importance of learning sexual topic increased in the experimental group. Perversely, there was a slight decrease in the control group who had not taken part in the program.

In conclusion, the innovative curricula of this SHE training program was associated with several positive outcomes. Firstly, those PSTs who took participated in the course increased their knowledge in topics related to SHE in general and SHE in the SE population. It has been found that teachers who participated in SHE training programs were able to make a difference in their student's perceptions and attitudes toward sexuality (WHO, 2002), while teachers who were lacking the knowledge perpetuated the cultural values that limit the access to services and knowledge of SHE (Iyer & Aggleton, 2013).

The second positive outcome relates to a change in attitudes to SHE in general and SHE in SE in particular. The most significant change in attitudes after participating in the course, related to the age from which SHE should be taught. After participating in the SHE in SE training program most PSTs thought that SHE should start at kindergarten age. The study also demonstrates the understanding gained on the importance of children receiving SHE at all ages in the education system. It has been found that even if curricula exist for teaching SHE in general and SHE in particular, whether they are delivered or not may depend on teacher attitudes (Argaman, 2018; Gerchenovitch & Rusu 2019; Lapidot-Berman & Firstater, 2018).

The third positive outcome relates to the willingness of PSTs to teach SHE in general and in SE in particular. The overwhelming majority of PSTs (around 80%) indicated that they would be willing and capable to teach SHE after adequate preparation. This further reiterates the importance of having well designed, effective SHE training programs included in all training programs for PSTs.

The findings of this study are relevant not only to the components of SHE in SE training programs but also to how programs may need to be adapted according to the backgrounds of the participants. Three important background characteristics were found to be the religiosity of participants, their ages and their marital status. Further, the findings emphasized that there is a pervasive lack of knowledge of SHE in SE topics, which in turn influence the attitudes of PSTs. As knowledge and attitudes vary between demographic groups, training programs need to be tailored to their participants needs. Furthermore, in order to tackle entrenched attitudes,

the training program must be sensitive to the backgrounds from which participants come and enable discussions and reflection.

The main limitation relates to the sample population. The study was carried out in four colleges in central Israel the population was fairly homogenous.

3.4. Study 4. Qualitative analysis of the Pre-Service Teachers (PST) personal reflection following their participation in SHE (SHE) course addressing persons with special needs

3.4.1 Introduction

In the attempt to identify an additional support for the quantitative data presented in the previous study, his chapter describes the qualitative analysis of the personal reflections of teachers participating in a SHE training program addressing people with special needs. The 11 participants could provide personal insights regarding the different aspects that had been addressed in the questionnaire.
The aims of this study were: 1) To investigate the attitudes of PSTs towards providing SHE to students with SN. 2) To explore the perceptions of the PST towards their ability to effectively provide SHE to SN students. 3) To examine the changes in the PSTs' perception of the importance at professional and individual levels of SHE, following their participation in SHE teacher training.

The hypothesis for the qualitative study was that participating in the SHE training program would change in a positive direction the PSTs attitudes to sexuality, improve their understanding of and attitudes to SHE in general and to people with disabilities in particular and enhance their sense of capability of teaching SHE in SE.

3.4.2 Methodology

In this study, a qualitative research approach was used to collect data about the attitudes of PSTs from their personal reflections following their participation in the SHE program addressing the students with SN. As part of the end of the semester project in a SHE training program at a college in Israel, the PST's were asked to share their personal reflections concerning the SHE training program they had attended, including both their personal and professional experiences and thoughts. A deep analysis of the personal reflections' texts can lead to the discovery of the thematic composition of the reflections enabling the reflections to be categorized into themes.

Participants
11 PST's studying in an educational college in the centre of Israel. The PSTs participating in the study had all participated in a SE SHE training program during the spring semester of 2018 and were chosen as a convenience sample from the professional network of the researcher. All eleven PSTs provided a written informed consent following their agreement that their personal written reflections will be used anonymously for the purpose of the research.

Research tools and data analysis
The research tool used in the study was a written personal reflection following a semester of studying in a SE SHE training program that was taught by the researcher. As part of the final assignment of the SHE training program, the PSTs were asked to write a reflection concerning the influence of the course on the professional and personal life. Data analysis was done by organizing and categorizing the information collected from the participants, by using the **thematic analysis method**. Hence, data was analysed according to the categorical sorting of different criteria pointed out by the interviewers (Shkedi, 2011). Responses were compared, and different themes were categorized so that the common aspects were emphasized when they were similar in their view (Patton, 1990). Then, a categorization of the findings and the relationships between the categories was conducted to reach a conclusion that sums up the specific finding. The categorization process involved a process of conceptualization by which a set of concepts was created to enable the attribution of meaning to the data.

3.4.3 Findings

The categories that emerged from the qualitative analysis of the PSTs' personal reflections were: Permission to discuss sexuality issues; Society's reflection and reaction towards SHE; Personal opinion concerning intimacy; teaching the topic of SHE; PSTs' attitudes towards studying a SHE training program, and dealing with inappropriate sexual behaviours of adolescents towards PSTs (Fig. 3.4.1). Direct quotes from participants' transcripts have been used in the qualitative studies (Holliday, 2007).
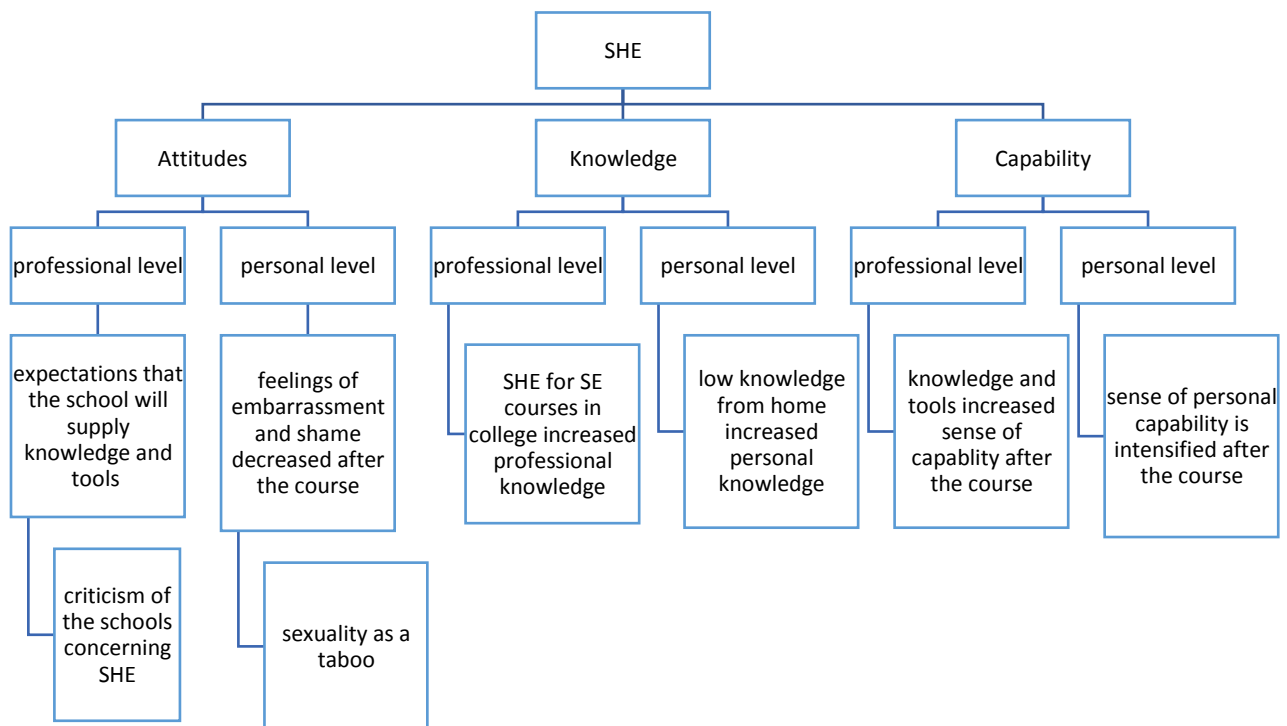
Figure 3.4.1 Categorization of the findings from the reflections of the PSTs.

Within each of the three categories, several themes emerged from the study of the PST's personal reflections. Figure 3.4.1 illustrates the relationship between the categories and the themes that emerged from the PST's personal reflections and that will be expanded upon in this section.

The reflections of the PSTs emphasized that before participating in the SHE in SE training program they felt that they had inadequate knowledge and skills to effectively teach SHE in SE. Individual reflections described lack of knowledge from the home and embarrassment at addressing SHE topics. Many of the reflections emphasized the positive contributions of the program to their knowledge and capabilities.

3.4.4 Discussion and Conclusions
       The findings outline the personal and professional experiences and thoughts expressed by the PST's about the SHE training they had attended. These findings, summarized from the PSTs' reflections show that although the PSTs generally had a positive attitude towards providing SHE for special needs students, many of them felt limited by their personal and professional capabilities. The PSTs were able to contemplate the value of the training on their professional and personal capability.

All PST's agreed that SHE must be taught in schools and even more so, in SE schools. Based on an examination of their personal reflections, where they shared their personal process during the SHE training program, there was a marked difference between their former opinions, prior to participating in the SHE training and their latter opinions and attitudes, following completion of the SHE training.

The qualitative analysis that was conducted on the personal reflections of the PSTs about the SHE training program that they underwent provided a descriptive evaluation of the developing perceptions, attitudes and behaviours of the teachers resulting from the training. The effectiveness of the course could be attributed in part to changes in the feeling of embarrassment and shame that the teachers had previously felt before beginning the training and to the increasing confidence that the teachers began feeling in their capability to deal with sexually related topics with their SN students.

Overall, most PST's expressed their strong opinion that the educational staff in school can play an important role in the students' lives and that they had a greater responsibility for effective education about SHE issues.

Attitudes of PSTs to sexuality and SHE

i) Embarrassment

The attitudes of the PSTs were complex regarding embarrassment and shame and may express the confusion they experienced while attending the SHE training program. Earlier research has found that teachers feel uncomfortable and insecure about sensitive issues related to sexual and reproductive health, sexuality and relationships (Mehmedovic & Cvjetkovic, 2017; Van de Bongardt et al., 2013). Topics that some of the teachers had previously considered taboo were discussed openly and professionally in the SHE training.

ii) Criticism of the school system

There is an expectation that the schools will reply teachers with the tools to teach comprehensive SHE. However, while SHE has been mandatory in schools in Israel since 1978, not all topics have been covered by the schools in their SHE programs. However, the SHE programs seem to fall short of expectations. It was reported in a reflection that in one school where SHE is taught, there were gaps between the program and the expectations of the teachers addressing the subject.

PSTs' knowledge of SHE topics before and after participation in the new course

The qualitative findings concerning the PSTs reflections regarding knowledge presented above show that the PSTs considered that participating in the SHE training program had increased their professional and personal knowledge.

i) Lack of Knowledge from home

One of the themes arising was that there are low levels of knowledge in the home, and that parents do not discuss sexuality with their children. In his book Vernacchio (2014) brings an open-minded approach and teaches parents how to talk to their children about sexuality in a positive way. He emphasizes the need to talk about sex in a very sexualized world that is very different to the world that they grew up in. Today's teenagers are exposed to the internet, and sexuality is much more open and uncontrolled. However, in order to talk effectively with teens about sexuality and relationships they suggest that parents need to talk with teens in age appropriate ways. Matching the developmental needs of teenagers is a complex matter for itself, adding to that the need to talk about sex and sexuality issues, is even more challenging for many parents. (Pariera, 2016). In their reflections, several of the PSTs emphasized the importance of knowledge about sexuality that is imparted in the home. Nevertheless, in very few homes have parents openly provided their children with explanations about sexuality. Furthermore, the parents have often felt challenged by discussions involving sexuality related issues with their children (Calderon & Rami, 1989). The PSTs mentioned that in some homes, topics relating to sexuality are not mentioned at all. Yet, many of the PSTs came to realize the importance of discussion about sexuality in the home.

Personal and professional capability to teach SHE in SE

The reflections revealed that the PSTs perceived that their professional capabilities to teach SHE were greatly improved after attending the course. This related in part to gaining knowledge about the tools necessary for teaching SHE. Various studies report the personal challenges faced by sex educators and unmet needs relative to their profession; and their expectations of themselves as sex educators. Clearly many educators fully recognize the importance of training, where these issues can be addressed. However, at the same time, they say that the training they undergo is inadequate and that they lack institutional support (Depauli et al., 2016; Goldman & Coleman, 2013; Mehmedovic and Cvjetkovic, 2016; Van de Bongardt, Bos & Mouthaan, 2009).

Lack of tools

The PSTs have indicated that they did not feel that they had received adequate training in the tools needed to deal with SHE and to be qualified to provide appropriate professional responses to their students. The PSTs expressed the difficulties in dealing with SHE issues with limited tools and a lack of knowledge of how to use the tools in the classroom. R.D. was teaching an 8th grade class of adolescent boys with behavioural difficulties and frequently encountered discussions amongst the students about sex and sexuality. She explained that before she had taken the SHE training. "I did not know how to react to these questions, and now, after acquiring some knowledge on the topic I am more confident in dealing with it".

Challenges relating to professional and personal capabilities

PSTs expressed their confusion regarding their capability to deal with SHE issues. Part of their confusion originated from their feelings that they did not possess the needed knowledge to deal with sexuality and sex with their students. E.L. explained that "at schools the issue of SHE goes mostly undiscussed with teachers and as a result there is kind of a "grey area" that school staff don't address."

Professional incapability before participating in SHE training programs

The training that is currently offered has often been recognized as inadequate for their needs. V.P. mentioned that lack of training in the college that she attended and emphasized that the subject of sexuality had not been discussed in classes or courses. The feelings of incapability became more clear once the teachers had participated in a SHE training program and could reflect on their situation prior to participating in the SHE training program. The knowledge and experience gained during the course enabled D.G. to try "to associate situation and behavioural patterns to my pupils".

SHE for the various complex developmental disabilities

Throughout this research, the entire student population in SE sector schools was treated as one group. However, students in the SE sector have widely differing disabilities, including a whole range of physical disabilities, behavioural problems, cognitive impairment and unique syndromes which affect students' learning and their interactions with others. Some research has been undertaken into how SHE should be approached for students with differing disabilities. The reflection by one of the course participants presented in the findings expressing the importance of the course for teachers in institutions for students with complex developmental disabilities agrees with findings in the literature.

3.4.5 Limitations

The qualitative method of reflections had its limitations. Eleven PSTs were included in a convenience sample of the research population to write their personal reflections following their SHE training. The analysis of the eleven personal reflections used to understand the efficacy of a SHE training program has limitations since the findings from the reflections were specific to the PSTs that had participated in a particular SHE training program. Furthermore, the sample population of participants in the qualitative study was somewhat limited. All the PSTs that agreed to provide their reflections were women and fell within the 24 to 27 years old age range. They were all studying at an educational college in the centre of Israel. Nevertheless, the research population can be considered as adequately representing the research phenomenon of PSTs providing SHE to students with SE needs, even though the sample population may not reflect the general population.

Additional research on the subject is recommended to gain further understanding of the attitudes of educators involved in teaching SHE training programs in their schools. In this qualitative study, all the participants were PSTs that had participated in the same SHE training program. Future studies could shed light on additional aspects related to SHE education of SE students, if PSTs that had not been given an opportunity to participate in SHE training were required to reflect on their capabilities and knowledge about SHE. Another major factor that is currently lacking in most SE programs and which is perceived as important both by the special needs population, and by teachers and caregivers, even in more conservative societies, is the prevention of health risks (Ang & Lee, 2016).

3.5 Triangulation of the qualitative and quantitative data

Triangulation is defined as the combination of different types of methodologies in the study of the same phenomenon in order to strengthen the validity of the study's results (Greene et al, 1989; Jick, 1979) The triangulation of quantitative and qualitative studies integrates the two types of data and explores complementary findings (Tonkin-Crine et al, 2016). The main idea behind triangulation being that it allows the researcher to gain a more complete picture of the results of any particular intervention. Triangulation assesses whether the two types of data converge, that is to say they agree with and complement each other and also can highlight any discrepancies (Jick, 1979; Tonkin-Crine et al, 2016). It also allows each method to compensate for the weaknesses in another method (Jick, 1979). When using mixed methods, as in this study, the data is first collected and analysed separately, and the results compared at a later stage.

Research question 1: What challenges may teachers and professionals encounter when teaching SHE programs in SE?

The findings of the first study, the systematic literature review, indicated that there is a lack of training for teachers who are responsible for teaching SHE in SE. Literature studied in the review also emphasized that without proper preparation educators feel embarrassed and uncomfortable about teaching SHE in SE. During the pilot study in which the KASHED (Knowledge and Attitudes to SHE and Disability) set of questionnaires were developed, it became apparent that the demographic data of the teachers should be taken into account when considering training programs. During the pre/post quantitative study the teachers' demographic data was investigated more closely. This revealed that a range of factors including age, religiosity, relationship status and whether or not the PSTs were parents were important in forming the PSTs attitudes regarding SHE in SE.

The quantitative study also showed that lack of knowledge has affected attitudes to disability in general and attitudes to SHE for people with disabilities in particular. If this is to be addressed, effective preparatory courses that deal with knowledge on SHE topics and knowledge about teaching students with a complex range of disabilities are essential. The qualitative study revealed the challenges faced by individual PSTs in more detail.

Although demographic data was not recorded in the relatively small sample of teachers participating in the qualitative study, it was apparent from the PST's reflections that the participants' homes had varying attitudes to discussing sexuality. The differing backgrounds affected the individuals' attitudes and openness to learning about sexuality and other topics covered in the SHE training program. However, all the participants reported that their knowledge and perceived capacities for teaching SHE in SE improved after participating in the program.

Research question 2: What components are meaningful to students and teachers and should be included in potential sexual education programs in SE frameworks?

The systematic literature review highlighted several important components of SHE training programs. These included the importance of SE teaching students' personal hygiene, the prevention of health hazards, components to promote awareness of harassment and exploitation, components that would provide tools for appropriate interpersonal and social communication, and how to cope with the impact of various physical disabilities on sexuality. The quantitative studies revealed that PSTs considered that SHE programs should include components on sexual abuse, sexual violence and rape as well as information about developmental changes during puberty and sexual intercourse during adolescence. In order to be better

prepared to teach SHE in SE the PSTs indicated that they would like more information on "sexuality and disability – attitudes, definitions, rights" and on "personal identity, sexual identity among teenagers with disability". Although they did not highlight attitudes to disability in general or towards sexuality in disability as being important components in a SHE in SE training program, the research into prevailing attitudes indicates that this is also an important component.

The qualitative study did not relate to the individual components of the course, but rather to the impact of the course offered, which in itself had been developed while taking into consideration the results of the systematic literature review and the quantitative studies, as well as the experience and opinions of experts in the field. The PSTs found the tools and knowledge imparted in the course improved their perceived capability to teach SHE in SE. The participation in the course and the opportunities to discuss sexuality had also contributed to removing troubling aspects of embarrassment and shame. Thus, in addition to the components of the course, the opportunity for interaction with the lecturers and with other PSTs also was of great value.

Research question 3: What is the impact of the SHE training program to SE PSTs on their SHE knowledge, attitudes and their capability to teach this subject?

The pre/post study produced quantitative data on the impact of the training program. The appreciation of the importance of teaching SHE to students of all ages increased after participation in the course. The level of importance attributed to various components also changes after participation in the course, particularly in relation to teaching about sexual abuse in early childhood. Notably the course increased the importance attached to learning about the attitudes to, definitions of and rights associated with sexuality and disability. Participation in the course also raised awareness to the importance of teaching about privacy, personal space and social distances.

The qualitative study revealed how important the PSTs considered participation in the SHE training program to be. Expressing the impact of the course in words, rather than in numerical scores in answer to questions produced a fuller picture of the significance of the course.

Using a mixed methods study including qualitative as well as quantitative methods yielded deeper insights into the impact of the training program.

Research question 4: Are there differences in attitudes and perceived capabilities to teach SHE among SE PSTs based on their age, gender, level of religiousness, general knowledge about human sexuality, personal status (including parental status) and teaching experience?

The quantitative studies looked specifically at these questions and found that there are significant differences in attitudes relating to age and religiosity of the PSTs. As the qualitative study highlighted the impact of attitudes on acquiring knowledge and on capabilities for teaching SHE in SE, it may be concluded that the demographic factors relating to PSTs need to be taken into account when designing SHE curricula for preparing PSTs to teach SHE in SE.

A qualitative study including the background demographic data of the PSTs taking part in a SHE training program may yield more important insights. However, it may already be concluded from the quantitative study, that the backgrounds of any SHE training program's participants should be taken into account when designing the curricula. As attitudes to SHE in general and in SE in particular may vary, particular attention may need to be paid to how discussions are handled in relation to the demographics of the course participants.

CHAPTER IV: DISCUSSION AND GENERAL CONCLUSION

4.1 Discussion of the findings from the research thesis

The purpose of this doctoral thesis was to investigate the psycho-social aspects of SHE training program for Special Education pre-service teachers.
The findings of the study can be summarized as follows:

- The findings of the systematic literature review show that there is a need for SHE training programs for students with special needs. The review found very few formal SHE programs that have been designed specifically for the needs of SE students. The topics in the systematic review that were found to be important for both staff and students are issues of health and hygiene, interpersonal communication in the context of romance and sexuality, prevention of sexual harassment and exploitation, and the impact of disability on sexuality.
- The KASHED package of questionnaires (Knowledge and Attitudes to SHE and Disability) was developed and found to be a valid and comprehensive package of questionnaires, which could be further used to the understanding of PSTs' attitudes, knowledge and capability to teach SHE in SE settings in Israel and in other cultures around the world.
- The quantitative and qualitative studies both clearly indicated that participation in the SHE training program designated for PSTs intending to work in SE led to increased knowledge on sexual health topics. It can be concluded from this that currently PSTs lack adequate knowledge in these areas. Therefore, it is strongly recommended that courses designed to increase knowledge of SHE topics should be incorporated into all college teacher training programs.
- The quantitative and qualitative studies also showed that participation in the SHE training program designated for PSTs intending to work in SE changed attitudes to topics of sexuality and sexual health. The quantitative study indicated increased openness to these topics while the qualitative study emphasized that there were changes in attitudes to SHE topics and to thinking about and discussing SHE topics with others.
- Furthermore, the quantitative and qualitative studies also showed that participation in the course changed the PSTs' attitudes to sexuality and disability. Teachers' attitudes to the sexual autonomy of the disabled have an important effect on the teachers' decisions about what aspects of SHE to teach to young people within SE. Participation in the course was shown to change attitudes to the PSTs' own capability as well as their attitudes to their students. Participation in the course may therefore impact upon teachers' willingness and abilities to teach sexual assertiveness, consent and other issues regarding the needs and rights of their students.
- Taking part in the course encouraged and promoted the PSTs to undergo a process enabling them to think about topics of sexuality and SHE and to discuss these topics. This process was shown to be critically important in enabling them to feel more confident about addressing these topics in schools. This finding further highlights the importance of effective training programs for teachers before they attempt to teach SHE topics to students in the SE sector. It must be emphasized that such programs should be assessed for their effectiveness not only in increasing knowledge of SHE topics, but also for changing attitudes to SHE and disability.

These findings not only underline the critical importance of such training programs in teaching colleges, but also the necessity of customizing such courses to take into account of differing backgrounds of the PSTs. Despite having attended school in the same country, participants may have widely differing attitudes, levels of knowledge and perceived capabilities for teaching SHE in SE. In order to be successful, any courses developed must take the background of participants into account and be able to deal sensitively with factors such as religious beliefs, lack of knowledge and misinformation received through stereotyping that has not yet been completely changed in the public's perceptions of the rights of people with disabilities.

All sections of the study revealed the current lack of adequate training programs designed for PSTs who will work in SE preparing them to deliver SHE to students with wide ranges of disabilities. The literature repeatedly reiterates that appropriately designed SHE is critically important for people with intellectual and other disabilities and that the lack of preparation of educators and carers who are charged with delivering SHE is one of the major obstacles preventing the delivery of comprehensive SHE to these people.

In an attempt to look at the influence of demographic variables, the impact of the following parameters were addressed: age, religiosity, marital status, having taught in a school previously, and parents levels of education. The effect of the **work experience** of the PSTs on their levels of knowledge and attitudes was also explored. The results indicated that the PSTs who do not work as teachers possess less positive attitudes towards sexuality after, compared to before the SHE training program. It is difficult to explain why participating in the SHE training program should have made these PSTs attitude more negative. The

difference between the two groups may be explained by the practical effect of teaching on the PSTs. The SHE training program may have been more appropriate for students who have already been exposed to behaviour of their students and have the experience of working in a school. When considering the impact of **being in a relationship** on attitudes towards sexuality and disability, it was found that PSTs who were not in a relationship possessed less positive attitudes towards sexuality and disability before taking part in the training program. Whether the teachers did or did not have **children** had no significant effect on levels of knowledge or attitudes to SHE and disability. **Age** of PSTs - after participating in the SHE training program, there was a greater increase in the level of knowledge among younger PSTs compared to the older ones. This may be related to their lower initial levels of knowledge. **Religiosity** - The level of knowledge in the religious group was seen to be lower than in both the secular and traditional groups. This may reflect differences in teaching SHE in schools in different sectors (state, national religious, ultra-orthodox). The higher increase in level of knowledge amongst the religious students could be related to their lower initial level, so the program brought their level of knowledge up to that of the students in the secular and traditional groups.

4.2. Theoretical Implications and Findings according to the research questions

Research question 1: *What challenges may teachers and professionals encounter when teaching SHE programs in SE?*

From the initial literature review it became visible that one of the major challenges to providing SHE in SE is that there is a lack of available information in the literature on the field. More specifically, it was found that there is insufficient information on SHE needs of people with disabilities in general and for people with different categories of disabilities (Kim, 2009, Chirawu et al., 2014; East and Orchard, 2014). Furthermore, there are insufficient teacher training programs preparing teachers to deliver SHE in SE. Without proper designated training teachers do not have adequate knowledge and the unique skills required to deliver the programs (Cozzens, 2006; Verdugo et al., 2012).

The models that have been progressively developed for teaching SHE in SE including PLISSIT (Anon, 1976); extended PLISSIT (Taylor and Davis, 2007) and APASST (Argaman, 2018) increasingly recognize the extra support that people with varying disabilities need in the field of SHE. However, the situation remains that with a lack of specially designed teacher training programs teachers do not know how to approach the topic of SHE with their disabled students.

The attitude that people with disabilities have different rights regarding their sexuality were explored in the KASHED questionnaires, recording the response to statements like 'People with a disability don't have "real" sex'; 'People with a disability are less exploited than those with no disability; 'People with a disability don't have spontaneous sex' and 'People with a disability have more important issues to see to than sexual relations'.

The qualitative study found that participation in the SHE training program gave the PSTs the opportunity to gain the knowledge lacking to them on SHE and SE and discuss their own attitudes and those of others, enabling them to increase their own sense of capability to teach SHE in SE. As will be discussed in the relation to the third research question, the PSTs reflected on overcoming embarrassment related to discussing sexuality as one of the significant benefits of participating in the SHE training program.

Research question 2: *What components are meaningful to students and teachers and should be included in potential sexual education programs in SE frameworks?*

Various goals for SHE have been proscribed by different international bodies. For example, the European Office of the WHO (WHO, 2010) outlined eleven goals for SHE including amongst others empowering people to make informed choices based on facts and enabling responsible behaviour; to enable development as a sexual being including the pleasurable experience of sexuality; having life skills to deal with sexuality and relationships; to have necessary communication skills. In Israel the goals of SHE programs were defined as: Increasing student knowledge about sex in order to reduce unwanted effects; Developing healthy and responsible sexual behaviour towards self and others; Developing positive attitudes towards sexuality;

Developing insight into individual and group sexual attitudes; Developing a stable personal system of values in relation to sexuality and its many expressions.

While the SE sector is directed at a diverse population of students with a wide range of sensory impairments, developmental disabilities, emotional and behavioural problems, learning disabilities and communications disabilities, this study has related to the SE sector in general, while acknowledging that different tools and different specialized knowledge is needed for people with differing disabilities. However, the thesis highlights the critical importance of SHE for people with disabilities and of elements of preparatory courses giving PSTs the tools and knowledge they need to deliver programs to special needs populations. As with all teaching occurring in the SE sector, it is important for educators to understand the unique nature of the individual's disability (Gindis, 2003). In SHE in particular, pervasive attitudes regarding people with disabilities as 'asexual' or not having rights or needs for SHE make the challenges more acute. If we accept the sexual and reproductive health of an individual to be an intrinsic part of their development, and the training of teachers to be critical in not only supplying them with the knowledge and tools to deliver specially adapted programs, but also the attitudes which may have a formative effect on their students, then the components of SHE training programs must be effective not only in delivering tools and knowledge but also in providing the time and space in which the teachers own attitudes may be discussed and developed.

The pilot quantitative study in this research indicated that PSTs wished to receive training in four areas: Social and romantic relationships among teenagers with disability; Sexual identity, sexual orientation and homosexuality; Sexuality and disability – attitudes, definitions, rights and Personal identity, sexual identity among teenagers with disability. The components they ranked as being important to be taught to their younger elementary school age students included: "Me and my body – getting to know my physical body at an early age"; "Sexual abuse in early childhood (my body is mine only)"; "Appeal for help when in distress (addresses and phone numbers of assistance centres)", "Developmental changes during puberty", "Sexual abuse, sexual violence and rape", "Privacy, personal space and social distances", "Sexual intercourse during adolescence (including decision-making)". They considered those topics also important for adolescents with the addition of "Body image and eating disorders in adolescence".

While there has been an emphasis on the importance of comprehensive SHE in general, it would not appear that any of the positive elements of SHE such as fulfilling and pleasurable intimate relationships were selected as being important to teach in the SE sector.

Research question 3: *What is the impact of the SHE training program to SE PSTs on their SHE knowledge, attitudes and their capability to teach this subject?*

The quantitative and qualitative studies in this research explored the impact of participating in a specially designed SHE training program for PSTs intending to work in SE. The experimental group in the pre/post study were found to have significantly higher levels of knowledge of SHE topics after participating in the training program. Participation in the training program also impacted upon the attitudes of the PSTs to a wide variety of issues including whether people with a disability have the same sexual needs as those without a disability; whether everyone has the right to exercise his or her sexual potential regardless of their physical or mental condition; whether people with a disability have the same libido as those without a disability; whether people with a disability should have more important issues to see to than sexual relations and finally whether sex is good only if you can "go all the way".

The qualitative study explored the changes in knowledge, attitudes and capability to teach SHE in SE among PSTs after participating in the SHE in SE training program. The first finding revealed a hesitancy among the PSTs about participating in the course itself. The levels of embarrassment and shame associated with discussing sexuality in society can be so high as to effectively work as a taboo. If people are not comfortable discussing sexuality or issues relating to sexual health, they will be unable to deliver any programs to their students. As discussed above this has been a major obstacle preventing the provision of comprehensive SHE in general, but has been even more acute in the SE sector, compounded, as discussed above, by attitudes to people with varying disabilities.

The qualitative study also revealed that participation in the SHE in SE training program gave them the tools needed to deliver SHE which they had previously been disappointed to discover had not been supplied by

schools. They considered the knowledge they gained useful on a personal and professional level. Interestingly, they felt that the opportunity to explore their own attitudes to sexuality contributed to their perceived competence in dealing with the topics and allowed them to improve their assessment of themselves as educational figures. Many of the PSTs reflections touched upon their improved sense of capability to teach SHE after participating in the course.

Research question 4: *Are there differences in attitudes and perceived capabilities to teach SHE among SE PSTs based on their age, gender, level of religiousness, general knowledge about human sexuality, personal status (including parental status) and teaching experience?*

The quantitative pre/post investigation examined the effects of the PSTs backgrounds on their attitudes, knowledge and perceived capabilities in relation to teaching SHE in SE. Although as only nine men, as opposed to 170 women, participated in the experimental group it was difficult to reliably conclude whether gender impacted upon any of the variables tested, no gender differences were revealed. Previous work experience as a teacher levels of religiosity, marital status and age all impacted upon knowledge and attitudes to sexuality. This indicates that all these need to be taken into consideration in planning SHE training programs.

4.3. Practical implications of the doctoral research

The data collected in the four studies included in this doctoral research contributed to a gradually deepening understanding of the implications of PSTs participating in SHE training programs for SE. The studies investigated the effects of SHE training program on the Israeli PSTs' attitudes, knowledge and capability to teach SHE. The results of the study revealed the current lack of adequate training programs designed for PSTs who will work in SE preparing them to deliver SHE to students with wide ranges of disabilities.

Study 1. A Systematic Literature Review - Components of SHE Programs for SE Students and Pre-service Teachers. The topics that were found to be important for both staff and students are issues of health and hygiene, interpersonal communication in the context of romance and sexuality, prevention of sexual harassment and exploitation, and the impact of disability on sexuality. The practical implications of the study include guidance as to how resources may best be allocated when attempting to improve SHE offered in SE, indicating that training programs are critically important and giving guidelines as to what may be included in these programs.

Study 2: Pilot Study – Quantitative Study. This study provided a tool for the examination of factors related to the effect of the course on the PSTs' attitudes, knowledge and capability to teach SHE in Israel. The package of questionnaires compiled as a result of the study was termed the KASHED questionnaire (Knowledge and Attitudes to SHE and Disability). The KASHED questionnaires may be used in the future to further contribute to a wider understanding of PSTs' attitudes, knowledge and capability to teach SHE in SE settings.

Study 3: Pre/Post assessment of the psycho-social impact of a SHE Training program on pre-service teachers. The findings from the pre/post study yielded valuable information about topics the PSTs thought to be important in any curriculum teaching SHE to students with special needs. The study also highlighted the impact of the backgrounds of the PSTs on their knowledge of SHE topics and attitudes to sexuality, and to sexuality and disability as well as revealing how background variables affected the impact of participating in the SHE training program. The findings also emphasized that there is a pervasive lack of knowledge of SHE in SE topics, which in turn influence the attitudes of PSTs. As knowledge and attitudes vary between demographic groups, training programs need to be tailored to their participants needs. Furthermore, in order to tackle entrenched attitudes, the course must be sensitive to the backgrounds from which participants come and enable discussions and reflection.

Study 4: The reflections of the PSTs added greater insights into how they benefitted from participating in the SHE training program. The structure of the program allowed in depth discussion and exploration of their attitudes to sexuality, sexuality and disability and their self-perceived capabilities of teaching SHE in SE. The findings indicate that in addition to imparting tools and knowledge training, programs must also allow exploration and discussion of attitudes in order to empower PSTs to be able to deliver SHE programs

in the SE sector. The reflections also indicated the critical importance of gaining accurate and reliable information concerning SHE.

The results in this study indicated that the PSTs found that the tools and knowledge imparted in the program improved their perceived capability to teach SHE in SE. The participation in the course and the opportunities to discuss sexuality had also contributed to removing troubling aspects of embarrassment and shame. Thus, in addition to the components of the course, the opportunity for interaction with the lecturers and with other PSTs also was of great value.

4.4. General conclusions of the doctoral research and recommendations

This study found that Israeli PSTs in the training program for SE feel that they lack up-to-date knowledge in the field of sexuality with an emphasis on SE, and there is also a great influence on the demographic background from which they came, and whether they received information about the subject when they were students in the education system. Almost all of the PSTs studying at education colleges think it's important to deal with this topic within the school framework and they are also willing to engage in it if they accept the appropriate training.

 One of the reasons that it is critically important to train pre-service teachers (as opposed to school counsellors) is the intense daily encounter between teachers and students at the school, which opens many options for communicating and forming effective pedagogic relationships. The interaction between the teacher and the student includes a certain degree of intimacy, with emotional investment and mutual interest, and creates an opportunity for the teacher to be meaningful to the child. The importance of maintaining an open, direct, and suitable educational discourse for the student is crucial.

Healthy responsible and informed sexual behaviours are key topics in the life of any young or mature person in modern society. Today, in the context of extensive easily available pornography, exposure to sexual violence and erotic adverts in all of the media and sex sites on the internet, there are confused and distorted perceptions of sex, making it increasingly important to reinforce the understanding of intimacy and love. Similarly, as future teachers have been found to have inadequate levels of knowledge, programs must be offered which can fill the gaps in all relevant subjects, enabling them to be sensitive to the needs of the students in these fields, and deliver effective SHE programs. In view of this, colleges should consider adding to programs in this field to their training programs. Updated knowledge of the issues discussed will contribute to the teachers' emotional wellbeing and will strengthen their self-confidence and ability to be meaningful and attentive to their students, the students' families and to people in society in general. When given specially designed effective training programs, future teachers will be able to deal with these issues without anxiety, to be accessible and open to solving problems and to answer questions that arise in this sensitive subject in the course of their work at the school. This includes learning and receiving tool about situations in the classroom that relates for example, to appropriate/inappropriate behaviours.

4.5. Research limitations and future research directions

In terms of limitations, as the main quantitative pre/post study (study 3) was carried out in four colleges in central Israel, the intention had been to include a diverse population and represent a variety of cultures and religions. However, since the convenience sample was based on the students who participated in certain programs, and were asked to confirm in their signature, the participation in the study it transpired that: 1) In the quantitative studies, all of the participants were Jewish Israelis who had been educated in Israel. 2) In the qualitative study, a relatively small sample of teachers participated, all of whom were Jewish women.

 The SHE training program contents discussed mostly protective elements of SHE and did not explore at depth more positive elements of SHE in SE such as the rights to intimacy and relationships. The discourse on issues related to relationships and intimacy present the educational teams with situations that require the abilities to participate in discourse and undergo emotional processing. Many times, the teams refrain from initiating or developing discourse on these issues because there is a gap between their understanding and desire for equality, and their ability to hold a grounded and practical discourse on these subjects. This

situation emphasizes the need for in depth work on personal attitudes, while providing applied tools on how to hold a meaningful educational discourse with the students.

In terms of further investigations, there are several possibilities for future research directions as stated below:

- Further research should relate to different demographic groups. The sample was all Jewish Israelis educated in Israel. Yet Israel is a multicultural country and a study population including ethnic minorities and recent immigrants could have made an interesting study. More diverse samples may yield other important findings relating to cultural and other important variables.
- Further research can explore as part of the demographic background, whether the teachers had friends or family members with disabilities and how this will affect their attitudes and capability to teach SHE for SE.
- A thorough qualitative analysis using semi-structured interviews and/or personal reflections following participation in SHE training program that will explore PSTs attitudes and capability to teach SHE for SE.

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