The concept of autism spectrum disorder: a study on knowledge sharing protocol among parents with autistic children in Ghana

Bernard Kissi-Abrokwah and Kwame Kodua-Ntim

Abstract

Purpose – *The purpose of this paper is to identify knowledge sharing practices used among parents with children diagnosed with autism spectrum disorder (ASD).*

Design/methodology/approach – *The study was based on qualitative philosophical foundations, where phenomenological case study design was used to make an in-depth understanding of how parents whose children are diagnosed with ASD shared knowledge among themselves. The population for this research consists of parents whose children have been diagnosed with ASD in Ghana. The study sampled for the study was 12 parents and was selected from 4 autism awareness centres in Ghana to obtain data through the use of focus group discussion and analysed with the aid of thematic analysis.*

Findings – *The study showed that the dimensions of knowledge sharing practices used by parents with autistic children were after-action review/lesson learnt, brainstorming, mentoring, coaching system, discussion forum, face-to-face meeting, documentation, peer assistance and storytelling. Finally, the study also revealed that knowledge sharing practices used by parents with autistic children help them in their daily engagement.*

Social implications – *An aspect of the training of social workers should focus on how to assist parents, family and neighbours of children with ASD. The government through the needed ministries and agencies should create a social support system to assist parents and families with children with ASD. Counsellors should avail their services to parents with children with ASD as early as possible to avoid or ameliorate some of the emotional and psychological challenges of these parents.*

Originality/value – *The paper offers a comprehensive overview on how knowledge sharing transforms the individual to learn and accept autistic condition in Ghana.*

Keywords *Ghana, Autistic spectrum disorder, Parents, Knowledge sharing*

Paper type *Research paper*

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Introduction

Childbearing is one of the happiest moments enjoyed by couples after marriage (Di Tella *et al.*, 2003; Lucas *et al.*, 2003; Twenge *et al.*, 2003), but couples are faced with pain and sorrow when the expected child is diagnosed with autism spectrum disorder (ASD). The dark sky moment confronts the couples as they begin to wonder why such a situation has happened to them or where such a condition could come from. The state of disequilibrium from these parents wanting to know why that happened or where such a condition came from is the most devastating moment that those parents face.

Most families in Ghana lack knowledge about ASD, so when a parent gives birth to a child with ASD such children are normally called "Bosom Ba" meaning "accursed children" whom

societies and individuals dissociate themselves from in public (Agyekum, 2018; Wireko-Gyebi and Ashiagbor, 2018). Because of the developmental deficits of inability to communicate verbally and nonverbally, autistic children have altered social interaction and repetitive behaviours such as obsessive interests (American Psychiatric Association, 2013; Wireko-Gyebi and Ashiagbor, 2018). The stigmatisation and the discrimination attached to families with autistic children makes it difficult to cope or manage children in such conditions, which also come along with financial obligations and the ordeal the parents go through to seek answers to ASD (Agyekum, 2018) to avoid their other unborn babies from suffering the same fate.

In addition, parents with autistic children face severe challenges in their children's upbringing. In Ghana, challenges faced by parents can be attributed to financial loss, limited access to knowledge sharing in the public domain or communities as to the causes, effects, symptoms and coping strategies used to handle children with the autistic trait (Agyekum, 2018; Tsinigo and Behrman, 2017). The lack of knowledge in the public domain is the crucial factor accounting for high discrimination and stigmatisation in Ghana (Donkor et al., 2018). Several attempts by the Ministry of Health, Ghana Health Service and health-related non-governmental organisations to bring innovative ideas to conscientise or educate people during autism awareness week have remained futile because of limited knowledge flow among families experiencing this disorder and the general public to understand ASD in Ghana (Tsinigo and Behrman, 2017).

The important tool to sustain parental understanding of the causes of ASD is the availability of knowledge in the public domain or knowledge sharing from resource persons. Studies by a cohort of researchers (Kommey, 2020; Qureshi et al., 2017) asserted that the availability of knowledge shared offer opportunities for individuals to accept their challenges. Again, they believed that the availability of knowledge shared also enhances communities and households experiencing ASD to understand themselves and their world.

Through knowledge shared, parents will receive information about ASD as this will inform their choices of spending time with their kids and become more effective and productive in dealing with their children's autistic conditions (Taylor and Buku, 2006). In the same vein, Kommey (2020) and Patii et al. (2017) added that effective knowledge sharing would help parents with children diagnosed with ASD to gain self-direction, self-understanding to adjust and have maximal homes. Meijer et al. (2015) highlighted that effective knowledge sharing constitutes a critical pathway to help parents develop an innovative and modernised way of caring for their children.

The study has provided a new transformative attainable approach on how knowledge sharing would be done to enhance parents' understanding of ASD. The new transformative attainable approach would help parents with autistic children to share knowledge to improve their children's conditions. The study would also help parents to understand the importance of knowledge sharing and how to promote knowledge flow among themselves. However, a well-informed parent who accepts and understands knowledge sharing will gain insight into their children's potentialities and relate the productive manner in participation in family and community activities.

Justification of the study

The researchers were informed by personal observation, experiences and empirical evidence on studies done on autism in Ghana. As educationists, the few encounters made with families living with children with ASD show that understanding of causes, symptoms and coping mechanisms to help deal with the situation are not sufficiently available. This is because most families believe that there is a spiritual backing to ASD. Anthony (2010) confirms that ASD is attributed to demons or through curses to the family. Anthony (2010) further asserts that most families living with ASD children also believe that the cause of ASD

is a result of retribution for transgressions committed by their fathers or members of their family. Most Ghanaians also believe that autism is caused by an accident that happens during pregnancy or mothers' attempt to perform abortion (Nukunya, 2003). In Sub-Saharan Africa, some health workers mislead or misguide parents with ASD children about the causes of the disorder (Bakare et al., 2009). The backdrop in understanding the causes and symptoms of ASD has limited most families experiencing this situation to seek knowledge. It is for this reason that the researchers decided to research knowledge sharing practices among parents with children experiencing ASD.

Theoretical review

The theoretical review of the study was based on the socialisation, externalisation, combination and internalisation (SECI) model. The SECI model was used as the overarching framework within which knowledge sharing practices among parents whose children are experiencing autistic spectrum disorder were explained.

Socialisation, externalisation, combination and internalisation

Nonaka and Takeuchi (1996) propose the SECI model which was used to describe how knowledge was shared, created, transferred and used. For more than two decades, SECI model has been used for the integration of knowledge sharing, knowledge creating and transferring knowledge in the field of education (Hislop et al., 2018). The philosophical assumption of the SECI model was based on tacit and explicit knowledge. Nonaka and Takeuchi's (1996) study was based on tacit and explicit knowledge to propose four different ways through which knowledge was created and shared within a given setting. These four knowledge sharing practices by Nonaka and Takeuchi (1996) can be grouped into SECI. It was from these initials of the four modes that the theory was named. Figure 1 shows the SECI model.

Socialisation

The first mode through which knowledge sharing under the SECI model was created is known as socialisation. Nonaka and Takeuchi (1996) explained that socialisation involves the sharing of tacit knowledge among individuals in an organisation when working with and observing a more knowledgeable person. The researchers asserted that socialisation sharing of tacit knowledge is done by a more knowledgeable person where others observe them as mentors. For instance, within the context of knowledge sharing practices among parents with children with ASD, tacit-to-tacit knowledge sharing include face-to-face meetings or coaching system where an experienced person imparts knowledge on how to cope or manage autistic children to their parents (Daneshgar and Parirokh, 2007).

Externalisation

The second mode of knowledge sharing was externalisation. The externalisation form of knowledge is the process of transforming tacit knowledge into explicit knowledge. Hislop et al. (2018) asserted that externalisation involves converting tacit knowledge into explicit knowledge through documentation. The researchers believe that through externalisation of knowledge sharing, parents with autistic children would share tacit knowledge on ASD into explicit knowledge to guide their engagement activities with their children.

Combination

The third mode on the SECI model is called combination. Nonaka and Takeuchi (1996, p. 838) emphasised that the combination mode of knowledge sharing involves emerging two different types of explicit knowledge. These involve codifying knowledge sources from

Figure 1 The knowledge sharing model by Nonaka and Takeuchi (1996)
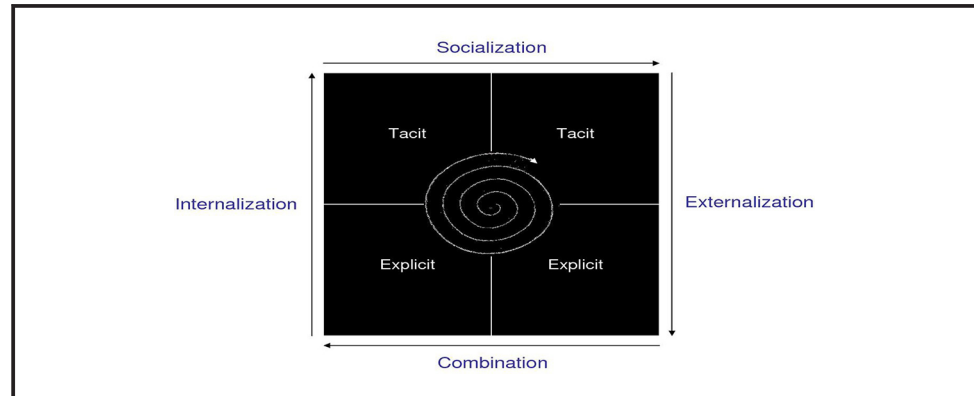
documents and Web pages which help in creating new knowledge that will be used to help parents with autistic children (Daneshgar and Parirokh, 2007). For instance, the combination mode of knowledge sharing includes a discussion forum, face-to-face meeting, storytelling and coaching system used by parents with autistic children to understand the causes and effects associated with ASD. This form of knowledge sharing happens via documents, telephone, WhatsApp, Facebook and meetings that enable parent-to-parent or expert-to-parent.

Internalisation

The fourth mode of knowledge transformation within the SECI model is internalisation. Sanchez (2018) mentions that within the context of the SECI model, internalisation constitutes the processes of explicit knowledge to create tacit knowledge. For instance, the management of autism awareness care and training centres (AACTCs) can try to innovate the way of sharing new knowledge with parents. Again, the AACTCs can also provide training programmes for its teachers and clinicians working at the centre to help provide effective knowledge on ASD to parents. Therefore, during the process of reflecting on explicit knowledge, teachers and clinicians can explain the explicit knowledge into tacit knowledge where parents would have practical skills or knowledge to handle their children (Nonaka and Toyama, 2003). The SECI model was significant in providing an understanding of how knowledge is created and converted among parents with autistic children in the Ghanaian context. This helps to understand how parents with autistic children are continuously creating or using knowledge in a dynamic manner (Hislop *et al.*, 2018).

Methods

The methodological choice for this study was underpinned by interpretivist philosophical assumptions concerning how knowledge was created and gained. The study was anchored on the qualitative research approach where phenomenological case study design was used to explore, describe, understand and dig deep into the life experiences of parents with autistic children at the AACTCs in Ghana.

The targeted population consisted of all parents with children with ASD in AACTCs in Ghana. In all, four AACTCs were selected using the purposive sampling technique because they are the oldest and have been in existence for over a decade. Again, convenient sampling was also used to select three participants for the focus group discussion (FGD) from each of the four AACTCs.

After all ethical protocols have been observed, the researcher wrote a letter to the participants to describe and explain the study objectives to the participants. Although, half of the participants accepted to take part in the FGD, most of the parents contacted declined, which compels the researchers to use small participants. Three participants were selected from each AACTC; therefore, the overall sample for the study was 12 parents.

Ethical clearance was obtained from the Ministry of Health in Ghana and was sent to the AACTCs. Before the FGD began, the researchers assured the participants a high sense of confidentiality and anonymity. Again, participants were debriefed that their mode of participation is voluntary and no financial incentive for participation, but refreshments were served, and costs of travel reimbursed. The prescript open-ended questions were asked focusing on knowledge sharing practices. The researchers were fluent in English and local language (vernacular) but not all the participants were fluent in the English language, so the local language was used for the FGD. A focus group interview is an open-ended conversation between members of a group and an experienced moderator that come together in a convenient location (Fusch and Ness, 2015). Before data collection, the instrument was pilot tested at Autism Awareness in Tema Metropolis in Ghana. Piloting the instrument help to correct ambiguous questions and those questions that were not suitable for the study were reconstructed.

The researchers spent four weeks for the FGD and the duration for data collection was between 1st November and 30th November, 2019. Before the researchers conducted the FGD, a letter was written to the supervisors of AACTCs. The letter clearly defines the target audience being a parent with autistic children and the recruitment procedure being convenient. During the FGD, goals and procedure for answering and asking questions were established before the interviews started. Each FGD lasted between 45 and 60 min and the venue for FGD was in the premises of the four AACTCs selected. Permission was requested from the participants to audio record the conversation as asking questions and taking field notes may prolong the interview session. After the interview session, the audio recording was played back for the participants to confirm their speeches before the session was closed. Again, after verbal transcription and accuracy checking on the data, it was sent to participants to sign their assertion before the data was used for the study.

The FGD was analysed using thematic analysis (Terreblanche and Durrheim, 2004). After four weeks of data collection, the researchers then played the audio-tape recording several times to get acquainted with the data. Before becoming thoroughly familiar with the data, the researchers tried to use the verbal explanation of ideas from research participants rather than abstract language, to tag the categories. Again, the researchers went beyond a summary of content but tried to find meaning to functions and other contradiction statements. The researchers developed themes and codes at the same time. This was done by grouping sentences and marking similar meanings to words by way of emergent themes. The researchers coded phrases, lines, sentences and paragraphs, identifying contextual material that pertains to the themes. At this phase, the researchers attempt to group themes under a single theme or all kinds of sub-issues under one umbrella theme. Elaboration was done to help the researchers explore themes closer to other themes. Lastly, a report and write-up was performed on each theme that was identified and how the themes fit into the study. The researchers were able to explain themes with sentences using research participants' own words as used during the FGD session. In explaining participants' comments, the researchers then merged various comments that were interrelated for the free flow of expression and readability.

Results

This section provides results on the FGD. The background information discussed was on gender, education qualification, number of children and the birth position of their child experiencing ASD. The background information showed that out of the 12 respondents

used for the FGD, 9 were female while 3 were male. On educational qualification, two respondents asserted that they have completed university and the remaining ten respondents confirmed that they had either completed junior or senior high schools. Out of the 12 parents, 6 confirmed that the situation happened to their first child and 3 parents stated that their second child was the one experiencing ASD while 2 cited that the situation happened to their third child. One parent confirms that the situation happened to her fifth child.

To disclose the identity of respondents, they were assigned with serial code. For instance, respondents in focus group 1 were assigned FG1-Respondent-1, FG1-Respondent-2 and FG1-Respondent-3 while respondents in focus group 2 were assigned FG2-Respondent-4, FG2-Respondent-5 and FG2-Respondent-6. Respondents found in focus group 3 were assigned FG3-Respondent-7, FG3-Respondent-8 and FG3-Respondent-9 whereas respondents in focus group 4 were assigned with the following codes FG4-Respondent-10, FG4-Respondent-11 and FG4-Respondent-12.

Forms of knowledge sharing practices used by parents with autistic children

This section discusses knowledge sharing practices among parents with children diagnosed with ASD. The forms of knowledge sharing practices discussed during the FGD at AACTCs are presented below:

After-action review/lesson learnt. This was the first theme respondents discussed during the FGD. Chhim *et al.* (2017) asserted that after-action review is the process where new knowledge is learnt through series of activities organised by a specialist where respondents learn new things which can be incorporated into their future practices. Some of the quotes from the respondents are provided below. For instance, FG1-Respondent-1 asserted "the centre regularly organised a workshop where specialist like speech therapists, psychologists, psychiatrists and paediatricians are normally invited to educate us about ASD".

FG1-Respondent-2 also confirms:

> Workshops organised during the first and last quarter of the year helped parents to know how to handle or care for their children. This programme also has helped us to know our colleagues whose children are also challenged with this autistic spectrum disorder in different districts, metropolises, regions.

FG1-Respondent-2 replied that "practical understanding of the treatments of autism spectrum disorder help us to handle or care for our children". FG1-Respondent-1 also added that "our their education is normally on behaviour modification programme on how to accept ASD". Other respondents (FG3-Respondent-7, FG4-Respondent-10 and FG4-Respondent-11) stressed that lessons learned during the workshop are normally based on how to use psychological concepts in training their children in the house. FG3-Respondent-7 emphasised how to use reinforcement in the teaching and learning process of autistic children whereas FG4-Respondent-10 highlighted extinction and stimulus control and FG4-Respondent-11 commented on shaping and chaining as the learnt behaviour she uses in training her child. These respondents (FG1-Respondent-2, FG4-Respondent-10 and FG4-Respondent-12) suggested that this form of knowledge sharing practice allows parents to realise what they have learned during the workshops or seminars. In the same vein, FG1-Respondent-3 and FG2-Respondent-5 added that lesson learnt as the form of knowledge sharing creates a climate of confidence for the parents to accept their children with ASD and learn psychological concepts used in training the children.

Brainstorming. The second theme highlighted by respondents was brainstorming. This form of knowledge sharing practices allows effective use and transfer of ideas or information

among parents whose children are suffering from ASD. From this theme, FG2-Respondent-4 commented:

> Colleagues who are well well-informed in this situation can transfer their experiences encounter when treating their children and share their knowledge with the newly admitted parents who visit the centre. This form of knowledge sharing is purely done to motivate us to cope with our children's condition.

> During our regular meeting ideas on a giving situation are normally put on board for us to discuss. At such meetings, parents are asked to share their ideas or knowledge on how they may solve certain conditions confronting their children. For instance, issues like engaging them in speech training and artistic training. (FG2-Respondent-6)

FG1-Respondent-3 asserted that "parents have a common platform where they address their challenges. Normally, video or tape on artistic drawing or concept crafted by our children is placed there to motivate other parents in helping their children". However, FG3-Respondent-9 and FG4-Respondent-12 shared similar views by saying parents are advised to share or transfer any procedure or any new creative way they used in teaching their children in the house. FG3-Respondent-9 replied that the excellent teachings from colleagues have helped them to accept ASD. FG2-Respondent-6 also added that the brainstorming procedure has helped them to accept and modify their perception about the cause of ASD.

These respondents shared a similar view: FG1-Respondent-1, FG3-Respondent-7 and FG3-Respondent-8. They asserted that during parent and teacher association (PTA) meeting, parents are assembled in groups where experienced people in the group ask them to come up with a good decision or suitable solution to manage their children's behaviour. In the same vein, FG3-Respondent-7 added that practical knowledge about how to exhibit empathy and another form of behavioural management techniques are discussed during the PTA meetings.

Coaching system. This subtheme represents how respondents perceive the coaching system as a form of knowledge sharing practices used among parents with autistic children. The researchers believe that the coaching system involves a more knowledgeable person sharing his/her experiences on how to support, cope, care and use certain behaviour modification strategies to assist children with autism. FG2-Respondent-5 shared her story:

> I remember the first day my daughter was diagnosed with an autism spectrum disorder that day was hell for me, but I was glad to the doctor who referred me to see the clinical psychologist at the Ridge hospital. How the psychologist spent time educating and counselling helped me to accept my daughter's condition. Because as a career woman I was thinking of how to leave my job and concentrate on my daughter's condition but through series of coaching, the clinical psychologist referred me to autism awareness and training centre for assistance where my daughter currently attends a school.

The coaching or guidance by counsellors and teachers in this awareness centre has contributed to the stable development of our kids. Their coaching on how to develop the cognitive ability and social functioning contributed to the understanding of my child's condition (FG3-Respondent-7).

In the same vein, FG4-Respondent-10 concluded that coaching of parents and interactive process between the teachers and children have developed parents' adaptive skills, as well as improvements in parental self-efficacy and treatment engagement with children. However, FG4-Respondent-11 added that the coaching tips provided by clinicians and teachers have motivated parents' in their efforts of improving their child's participation in daily routines.

In the same vein, FG1-Respondent-1 concluded that new parents whose children are admitted to the school are given to more experienced parents and teachers to assist them on how to understudy, cope and manage their children's situations. These respondents (FG2-Respondent-4, FG2-Respondent-6 and FG4-Respondent-12) believe that the coaching system was an efficient knowledge sharing practice because it allows parents to feel more confident through the real support and follow-up service provided by clinician and teachers. FG4-Respondent-10 asserted that the coaching system gives the parents the chance to learn new skills and techniques used in training or teaching children with ASD.

Documentation. The next subtheme respondents highlighted during the focus group interview was on documentation of ideas and attitudinal style to handling children with ASD. FG2-Respondent-5 confirmed that manuals and brochures were often given to them by experts on their treatment, education, cope strategies and feeding. After every clinical session, flyers are provided to them to read to obtain information about autistic spectrum disorder (FG3-Respondent-8). FG4-Respondent-12 also confirms that he remembers during our workshop for parents with autistic children a psychologist came to present a paper on how evidence-based treatment models could be used for ASD children in the community settings.

The respondents confirmed that the school has a library where parents could go and read about autism (FG1-Respondent-1, FG1-Respondent-2, FG1-Respondent-3, FG2-Respondent-4, FG2-Respondent-5 and FG2-Respondent-6). Other respondents also confirmed that when colleagues found any print document or information concerning the treatment plan or any behaviour modification strategy they shared them with other parents (FG4-Respondent-10, FG4-Respondent-11 and FG4-Respondent-12).

Discussion forum. The next subtheme was on how parents with autistic children used discussion forums to share knowledge among themselves. In recent years, discussion forums and chats have become an essential component in knowledge sharing practice used by parents with autistic children. FG3-Respondent-9 shared his opinion as "during our meetings, the counsellor and teachers allow us to exchange ideas". The school has a common platform where parents with autistic children share their knowledge to support one another (FG2-Respondent-6). We do have a text messaging application platform where we share information on (FG2-Respondent-6). FG2-Respondent-4 added that we discuss sensitive issues on our text messaging page. On our text messaging page, parents always post news, suggestions and questions about issues which are conflicting with their understanding (FG3-Respondent-7).

However, respondents (FG1-Respondent-3, FG3-Respondent-8 and FG4-Respondent-12) said people posted comments on the page when they wanted to seek clarification on issues. The school has an open day discussion forum where parents come and share their experience with their children at home (FG1-Respondent-1). FG1-Respondent-2 added that during open day forum discussion, more knowledgeable persons are normally invited to advise them about the treatment plan and challenges we may be encountering when nurturing children with ASD.

Face-to-face meeting. One form of knowledge sharing practice respondents commented on was face-to-face meetings among members. On this subtheme, almost all the respondents attested to the fact that they sought consultation by meeting their friends one-on-one for clarification concerning their children's condition. Through personal conversation, parents discussed behaviour that seemed to be boring their minds with friends (FG1-Respondent-2). FG1-Respondent-3 asserted that such meetings happen when parents had observed some abnormality in behaviour of their kids, and they sought clarification from their colleagues if their children behave that way.

In the same vein, FG2-Respondent-5 and FG2-Respondent-6 shared similar concerns in meetings with doctors and other health professionals which were done regularly

(FG2-Respondent-5) while consulting doctors and going for medical check-ups were also done regularly to keep their children fit (FG2-Respondent-6). At the close of PTA or open day discussion forum, parents sometime seek clarification from the speaker or colleagues (FG1-Respondent-1).

Mentoring. Other respondents asserted that the most important knowledge sharing practice enjoyed by the parents was mentoring. I enjoyed the mentoring system provided by teachers and clinician when they visited me in the house to assess our well-being (FG1-Respondent-1) while FG1-Respondent-3 concluded that regular and unannounced mentoring done by the teachers and health professionals gave them "wee feeling" and "spirit of commitment" to care and support their children. In the same vein, FG1-Respondent-2 said that the health professional and other teachers frequently did follow-up to check how children assigned to them are faring. FG1-Respondent-2 replied, some came to our houses to advice and FG1-Respondent-3 said that some teachers came to the house to spend time with them. FG1-Respondent-3 replied "No!" But the teachers and other professionals came to check if they were performing the assigned duty given to them in school.

It also came up that teachers from the autism awareness centre visited the house to participate in activities that were designed to monitor the progress of children (FG4-Respondent-12). FG4-Respondent-10 also revealed that by way of appraising the children to ascertain the effectiveness of activities given to them in school, other professionals such as speech therapists and clinical psychologist frequently mentored their progress in the house. These respondents (FG2-Respondent-6, FG3-Respondent-7, FG3-Respondent-8 and FG3-Respondent-9) believe that the mentoring system equipped parents with children diagnosed with ASD to learn from experienced parents whose child have been diagnosed with ASD for a long time. FG4-Respondent-11added that mentoring gives parents the chance to share their experiences and the expertise they have gained in rewarding relationship. Similarly, FG4-Respondent-10 asserted that the mentoring system also enlightened parents to new ways of thinking and doing things for their kids.

Peer assistance. On issues of peer assistance as a form of knowledge sharing among parents with autistic children, most parents said that during weekends they normally spent time with their colleagues or at times they visited the awareness centre to engage the children in activities. Remarks from FG2-Respondent-6 showed that she used to leave her daughter with some of her colleagues when she was going to funerals or attending to some other activities. FG2-Respondent-4 confirmed that teachers and other health professionals such as speech therapists assisted by sharing knowledge in the form of a project or piece of work in which the children assisted themselves in groups.

These respondents (FG3-Respondent-8, FG4-Respondent-10 and FG4-Respondent-12) concluded that parents support themselves with equipment and other playing materials for their kids. Also, FG1-Respondent-3 and FG2-Respondent-5 asserted that they share health-related advice and also provide monetary support to the less privileged parents. FG2-Respondent-6 said that peer assistance promotes cooperation between them and also help them develop strong networks to assist their kids. FG2-Respondent-6 mentioned that this form of knowledge sharing helps them to make informed decisions as to which therapy or behaviour modification strategy to use at a certain point in time.

Storytelling. On the last subtheme, respondents attested to the fact that storytelling forms part of knowledge sharing practice used in delivering information to parents with autistic children. For instance, FG3-Respondent-8 asserted during the PTA meeting, storytelling was used to share knowledge by creating spaces for parents or professionals to share their personal experiences in nurturing a child with ASD among themselves through stories. FG3-Respondent-9 added personal experiences shared to us spark our interest to engage our children with activities in the house. FG3-Respondent-7 added, when you hear the story shared by another parent then you live to cherish what God had done for you. FG2-

Respondent-5 asserted that during their meeting, a parent whose two children were experiencing ASD gave her testimony and she accepted her situation that she found herself in. Some other respondents (FG1-Respondent-1, FG1-Respondent-2, FG4-Respondent-11 and FG4-Respondent-12) supported the assertion of FG3-Respondent-7 that the life stories of other parents made them appreciate what God has done for them. FG1-Respondent-1 further stated that funny and exciting stories shared by colleagues motivate them to remain strong in caring for their kids. FG1-Respondent-2 emphasised that the stories shared during PTA meeting and open day forum helped to foster a sense of community which promote the development of good human relationships among parents with children diagnosed with ASD. FG4-Respondent-10 concluded that stories inspire parents with children's diagnosed with ASD to take action about their child present situation.

Discussions

This section presents a discussion of findings on knowledge sharing practices among parents with autistic children. The purpose of discussion or interpreting of findings was to provide an opportunity for the researcher to add meaning and connection to the already existing themes found in the study (Taylor-Powel and Renner, 2003).

After-action review/lesson learnt

It was found that lessons learnt from the workshops or seminars organised by autism awareness centres help respondents in knowing how to manage their children with ASD. Other respondents highlighted psychological concepts learned during the seminar that assisted them in the training process of their kids. The psychological concepts highlighted were reinforcement, extinction, stimulus control, shaping and chaining. The researchers believe that the use of psychological concepts and the steps in the behaviour sequence are identified from the initial stages of the study.

The parents are required to use the "arrive at it" method to lead their children through each step in the sequence rewarding each response until the child arrives at the final stage; that is the desired behaviour. Often, particularly in the learning of skills, the parents should reinforce responses that are only partly rewarding one successive approximation after another before leading the child to the correct way of performing that skill. Edjah (2018) believes that reinforcement increases the probability of a response occurring or the organism repeating such behaviour in a favourable environment.

The researchers asserted that lessons learnt practice could ensure that workshops organised for parents become critically reviewed to share the core or essential knowledge in educating parents about ASD. Again, lessons learned are effective procedures because they provide participants with new ideas or knowledge about how to treat, care, support, cope and give guidance to children with ASD. In support, Rosenberry and Vicker (2017) posit that lessons learnt are a simple concept of knowledge sharing but they provide effective feedback of training programmes or sessions. Similarly, Chhim et al. (2017) concluded that the lessons learned process is vital because new knowledge or new things are identified through a series of activities that can be incorporated into future work practices. Within the context of ASD, the lesson learnt is when practical knowledge received by parents is incorporated into the new knowledge gain for training their children (Rosenberry and Vicker, 2017).

Brainstorming

This form of knowledge sharing practices allows effective use and transfer of ideas or information among parents with children with ASD. It was reviewed that parents had direct contact with others who experienced the same autism challenge to share how they train, cope and manage behavioural changes of their children. This knowledge sharing

procedure was useful because parents were able to get first-hand information from colleagues whenever they finish with their PTA meetings and open day forum. In support, Kamarudin et al. (2015) confirm that brainstorming is often regarded as a group creativity technique through which efforts from parents with autistic children find a conclusion or solution to a problem. With brainstorming, a group of parents is met in AACTCs to deliberate on new ideas on how to help their children. Hislop et al. (2018) conclude that brainstorming help parents with autistic children to provide suggestions and solution to a difficult task during meetings. Hislop et al. (2018) further asserted that brainstorming among parents encourages spontaneous ideas that are always evaluated during decision-making process. Within the context of ASD, knowledge shared through brainstorming help parents to find a solution to their children's behavioural and psychological challenges.

Coaching system

This form of knowledge sharing involves how a more knowledgeable person sharing his/her experiences on how to support, cope, care and use certain behaviour modification strategies to assist children with autism. Other respondents attested to the fact that the love that is shown by counsellors, clinical psychologists and doctors of the autism awareness centre encourages or relieves them from the pain they were experiencing when they got to know of the situation of their children for the first time. The researchers believe that the coaching system helps them to acquire new skills and cognitive restructuring on how to deal with their children. This form of knowledge sharing aims to improve parents teaching or training skills to assist their children's present condition. Coaching focuses solely on the parent's predefined needs as these relate directly to their children's ASD condition. In support, Akram and Bokhari (2011) conclude that coaching involves parents learning or working alongside an experienced clinician and teachers who know when and how to intervene and share tacit treatment, behaviour modification and other skills of knowledge would be applied. Kamarudin et al. (2015) asserted that coaching also involves parents developing new skills from other parents by observation. Coaching also helps parents to reflect on actions that promote their wards' ability to participate in family and community activities (Kamarudin et al., 2015).

Documentation

Respondents asserted that manuals and brochures on how to treat and care for autistic children were given to them when they first visited the autism awareness centre. It was also revealed that posters and other materials were posted on the class wall and the school compound as to how to provide attention, communicate and provide home teaching concepts for the parents. The researchers believe that in the context of ASD, experienced clinicians and teachers can share knowledge in manuals and brochures where parents can access explicit knowledge. In the context of ASD, experienced parents or therapists can be made to document, in detail, all processes and practices undertaken, for instance, in a given ASD, to provide access to explicit knowledge. These experienced parents or therapists would need to be compensated for such efforts. Other parents can access such documents to read and apply them to their children with ASD and, through that, knowledge is shared among the parents that would help change or modify their children's behaviour. For instance, Michalik (2017) asserted that the documentation procedure for knowledge sharing practice involves the strategy of storing explicit knowledge in databases so that it can be accessed by individuals who need information on ASD.

Discussion forum

Online chatting was part of the procedure used for knowledge sharing among parents with autistic children. It was believed that most of the meetings were done on text messaging

applications such WhatsApp, Google Meet, Skype and at times conference calls. These procedures of knowledge sharing help parents to share their challenges and others also come out with solutions/remedies to help the mental growth of parents as to how to handle their children. Such discussion fora were normally moderate by clinicians or doctors who also provide the needed support for parents. In recent years, discussion fora and chats have become an important knowledge sharing practice. They are in-person or electronic forum for the staff or like-minded individuals to exchange ideas, post questions, offer answers or offer help on relevant subjects (Garcia *et al.*, 2018). Within the context of ASD, discussion forum provides the platforms for parents to share knowledge by posting questions and responding to others' questions on a common platform set up for exchanging ideas. The parents can post questions about issues they want to understand about their children's ASD, and others would respond with different possible ideas or solutions. Knowledge sharing through electronic means helps individuals to exchange ideas, post questions, offer answers or offer help on relevant subjects (Garcia *et al.*, 2018). Discussion fora help individuals to understand the complex concept and also bring mind-like ideas together (Garcia *et al.*, 2018, p. 287).

Face-to-face meeting

It was also revealed that parents were using face-to-face meetings or personal conversations as a form of knowledge sharing practice. To this, respondents attested to the fact that they sought consultation from friends whenever they met during PTA meetings. Other respondents said that they explained behavioural change or behaviour exhibited by their children with some experienced parents to see how best they can help them. However, it was also reported that parents sought advice when they consulted doctors on one-on-one bases. In support, Bozzato *et al.* (2018) confirmed that face-to-face knowledge sharing involves direct contact between parent–parent and parent–expert. Face-to-face meetings provide effective feedback or prompt feedback (Bozzato *et al.*, 2018) and facilitate understanding and accurate interpretation (Rosenberry and Vicker, 2017). Face-to-face meetings are useful ways of sharing tacit knowledge among parents with children diagnosed with ASD (Bozzato *et al.*, 2018).

Mentoring

It was reported that the mentoring system provided by teachers, clinicians and counsellors during their routine home visitation gave the parents the "we-feeling" and "spirit of commitment" to support their children. It was also revealed that mentorship clubs were formed to assist new members who visited the centre. In support, Garcia *et al.* (2018) explained that mentoring systems are guidance or follow-up in which professionals check the progress or monitor children with ASD. Within the context of knowledge sharing among parents with children diagnosed with ASD, mentoring allows access to knowledge, especially for new parents whose children have developed ASD to learn from the old parents. Consequently, the researchers also believe that mentoring and follow-up are very important in knowledge sharing practice because they allow the parents (mentors) to be readily available, accessible and prepared to share their knowledge to assist the new parents (mentees) to gain the relevant knowledge to improve on their children's conditions.

Peer assistance

The most frequent form of knowledge sharing as discussed in the study was peer assistance. Most of the respondents revealed that because of the effectiveness of the knowledge sharing platform, most parents allowed their children to spend the weekend with their colleagues when they were personally engaged at funerals or weddings. The researchers believe that within the context of knowledge sharing practices for ASD children,

peer assistance involves parents meetings or inviting other colleagues with relevant knowledge or experience to share critical insights with them on ASD. Peer assistance is considered the easiest and most effective way of knowledge sharing (Lave and Wenger, 1991). A peer assistance meeting may be either face-to-face, coaching and monitoring where one individual provides insight or share his/her knowledge with colleagues (Karagoz et al., 2016). Peer assistance involves sharing tacit knowledge through direct contact with the person in possession of this knowledge (Bozzato et al., 2018). In the context of ASD, the personalisation strategy commonly entails acquiring tacit knowledge that cannot be codified and stored in a database (Michalik, 2017). Peer assistance is argued to be a highly useful way of sharing tacit knowledge among parents with children diagnosed with ASD (Bozzato et al., 2018). This was because peer assistance allows immediate feedback that facilitates understanding and accurate interpretation of children diagnosed with ASD (Rosenberry and Vicker, 2017).

Storytelling

The study showed that storytelling and sharing of personal experiences during the PTA meeting enlightened parents to have the spirit of commitment as to how to deal with their children's conditions. It was also revealing that testimonies from experienced parents or mentors helped most parents to feel accepted in life. Within the context of knowledge sharing among parents with children diagnosed with ASD, storytelling can be used to share knowledge by creating spaces for parents to share their personal experiences in nurturing their children among themselves through stories. Garcia et al. (2018) explain that storytelling is the skilled delivery of stories used to present anecdotal evidence, clarify a point, support a point of view and crystallise ideas. Dzandu et al. (2014) concluded that in knowledge sharing practices, stories use verbal pictures to spark parents' interest, add variety and change the pace of treatment and personal engagement with their children. With this, the researchers believe that knowledge sharing among parents with children with ASD can be both verbal and visual to help communicate ideas and knowledge effectively to the other parents.

Conclusion

- The study concluded that knowledge sharing practices which include after-action review/lesson learnt, brainstorming, mentoring, coaching system, discussion forum, face-to-face meeting, peer assistance and storytelling were effective in helping parents with children diagnosed with ASD to accept, cope and engage in various activities.

- The study revealed that knowledge sharing practices provide a concise and coherent platform for parents and specialist to transfer ideas about ASD.

- It was revealed that knowledge sharing practices helped parents with children diagnosed with ASD to know the rudimentary psychological concepts used in training and teaching autistic children.

- The study concluded that knowledge sharing practices created the avenue for parents with children diagnosed with ASD to share their grievances of nurturing autistic children.

- The insight gained from SECI theory helped parents with children diagnosed with ASD to integrate scientific and indigenous knowledge sharing practices to support their daily engagements with their children. The theory helps to build interpersonal trust through interaction among parents get them closer to practical equilibrium in maintaining the best and efficient way of sharing knowledge.

Recommendation

In line with the results of the study, the researchers recommend that:

- The Ministry of Health and Ministry of Education in Ghana should educate and create awareness on causes of ASD to detach the general public from speculations, discrimination and stigmatisation against families with ASD children.

- The Ministry of Health and Ministry of Education in Ghana have to leverage the high awareness of the benefits of knowledge sharing among the parents of autistic children as it is a critical opportunity that creates a supportive context for implementing knowledge sharing programmes among parents and the psychological concepts used in training children diagnosed with ASD.

- Quarterly and annual programmes on knowledge sharing should be organised frequently to help families living with autism share their grievances or experiences.

- Free education and health-care delivery should be extended to children diagnosed with ASD because the cost of educating and nurturing them has caused most parents to lose their jobs.

- Experts in the field of ASD in Ghana should set up a knowledge bank or documentation portal where parents or individuals can access information on autism easily.

Social and counselling implications

- An aspect of the training of social workers should focus on how to assist parents, family and neighbours of children with ASD.

- The government through the needed ministries and agencies should create a social support system to assist parents and families with children with ASD.

- Counsellors should avail their services to parents with children with ASD as early as possible to avoid or ameliorate some of the emotional and psychological challenges of these parents.

Theoretical implications

The SECI model was significant to this paper because it provides an adequate framework that creates and converts knowledge among parents with children diagnosed with ASD. This has helped to understand how the parents continuously create, use and reuse knowledge continuously and dynamically. Apart from helping to explain how the parents create and convert knowledge, the SECI model also provides a framework for understanding how knowledge is shared and transferred among parents with children diagnosed with ASD. The results showed how knowledge was shared face-to-face among the parents during brainstorming, peer assistance, storytelling and discussions in the meetings (tacit to tacit). Parents were able to record their notes and coded them according to their understanding to facilitate ease of recalling the knowledge shared at the meeting (tacit to explicit). The results show that parents were following these process by combining the knowledge recorded from other sources mentioned during storytelling, face-to-face meeting, discussion forum, brainstorming and follow-ups outside (explicit to explicit) using telephones or e-mails. It is imperative to note that the SECI model contributes greatly to parents in understanding the need for knowledge sharing practices.

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