Title

Exploring attitudes of medical students towards intellectual disabilities

Abstract

Purpose: To determine whether an inclusive teaching session changes student attitudes towards people with intellectual disabilities. To investigate the impact of an inclusive teaching session in terms of student perceptions.

Methodology: 66 year 4 students at Cardiff University completed the Attitudes Towards Disabled People questionnaire (ATDP-B) before and after a communication skills session on intellectual disabilities. Before and after scores were collated and compared using a paired t-test analysis. Common perceptions were identified using anonymised ATDP-B results to conduct five semi-structured interviews and one focus group with nine students. The common perceptions were discussed, alongside how the teaching session tackled them and suggestions for further improvements.

Findings: Mean ATDP-B score before the teaching session was 115 (*SD* = 14.5). Mean ATDP-B score after the teaching session was 122 *(SD* = 17.2). The teaching session improved scores in the ATDP-B by a mean of 6.92 (4.69, 9.16). A paired t-test found this to be a statistically significant difference, $t(65) = 6.20$, $p < .001$. Qualitative data was thematically analysed and three main themes were identified: Patient Contact, Equity in Healthcare and Curriculum Content.

Originality: This is the first study to investigate the origin of the negative attitudes of medical students, and found they stem from a lack of confidence in their abilities and failure to develop a professional identity. The impact of the teaching session stems from its focus on meaningful patient contact and identifying and overcoming communication barriers.

Introduction

In the UK, individuals with intellectual disabilities (ID) have distinctly poorer health outcomes compared to the general population (Emerson et al. 2016) On average, their life expectancy is 15-20 years less and they are fifty-eight times more likely to die before the age of fifty compared to non-disabled individuals (NHS England, 2017) (Hollins et al. 1998). A greater proportion of people with intellectual disabilities die in hospital, the greatest percentage in those with profound disabilities. (NHS England, 2017).

The UK Disability Rights Commission investigation concluded people with intellectual disabilities experienced inequalities in primary care, both accessing care and the quality of treatment received. Examples included a lack of regular health checks, screening opportunities and health promotion advice. (Disability Rights Commission, 2006). Another significant finding was of "diagnostic overshadowing", where the physical problems reported by patients were dismissed as being a symptom of their disability (Disability Rights Commission, 2006).

Mencap's "Treat me right" enquiry highlighted that healthcare professionals lack understanding on communicating with patients with intellectual disabilities and they are reluctant to include family and carers in decision making (Mencap, 2004). Family members described healthcare professionals not recognising non-verbal "distress cues" of these individuals, which lead to inadequate or delayed treatment and avoidable mortality (Mencap, 2004).

Several enquiries have highlighted the negative attitudes of healthcare staff as a critical component contributing to healthcare inequalities for this vulnerable group of patients. A systematic review found staff to frequently self-report negative attitudes and identified this as a key barrier in accessing equal healthcare (Hemm et al. 2014). Negative attitudes are arguably the root of the inequalities seen, as they lead to the dismissal and devaluing of individuals with intellectual disabilities.

Medical curriculum

The independent inquiry "Healthcare for All" found similar evidence of unmet health needs and lack of access experienced by people with intellectual disabilities (Michael, 2008). A recommendation was therefore made to include compulsory training at medical undergraduate level that directly involves individuals with intellectual disabilities (Michael, 2008).

Training at undergraduate level is significant as several studies have found medical students to have negative attitudes and misconceptions about intellectual disabilities. A cross-sectional study of Greek healthcare students found widespread poor attitudes towards physical and intellectual disabilities (Kritsotakis et al. 2017). Another Australian study found negative attitudes towards cerebral palsy, with almost 50% disagreeing with the statement "having a child with cerebral palsy would be better than no child at all" (Martin et al. 2005). A British survey found that medical students associate disability with negative words of personal attributes and loss, alongside patronising attitudes towards disabled individuals (Byron et al. 2005).

The attitudes that medical students hold are critical as they are tomorrow's doctors. Negative or uninformed attitudes lead to devaluing of patients, and can have a real impact on a patient's experience in the health service.

Furthermore, attitudes are learnt through education and experience. Research shows that medical education in intellectual disabilities is inconsistent and inadequate. Kahtan conducted a survey

across 23 UK medical schools that found disparity in disability studies; while all offered didactic teaching methods, there were few opportunities for direct clinical exposure (Kahtan et al. 1994). More recent studies have found similar evidence of the paternalistic focus in medical schools and limited contact with real patients (Thacker et al. 2007). (Burge et al. 2007). (Campbell 2009). Audits of Australian medical curriculums found limited compulsory content, with a focus on knowledge transmission rather than shaping attitudes (Trollor et al. 2016; Trollor et al. 2018).

Existing literature

Due to evidence that suggests valuable contact with individuals with intellectual disabilities results in improved attitudes, many medical schools have incorporated inclusive teaching sessions into their curriculum (Ryan et al. 2014)

A landmark teaching session was introduced at St George's medical school in 1996, using professional actors with an intellectual disability (Hall et al. 1996). They found a significant improvement in attitudes, demonstrating the importance for knowledge not to be isolated; students should understand conditions in a holistic manner to truly meet the healthcare needs of those individuals. (Hall et al. 1996). A 2007 study looking at this same teaching session found the sessions improve student communication skills, specifically in the non-verbal aspects (Thacker et al. 2007). They found the sessions made students more thoughtful history takers, who now increasingly consider the language they use (Thacker et al. 2007).

Another inclusive teaching session study combined didactic teaching on development disabilities with a communication skills session with actors with intellectual disabilities (Tracy et al. 2008). Along with a positive shift in attitudes amongst students, a significant finding from this study was a move from pity for people with intellectual disabilities to a greater understanding that they can lead fulfilling and content lives (Tracy et al. 2008).

Another study discussed the idea of cognitive disequilibrium as a reason why inclusive teaching sessions work well (Sarmiento et al. 2016). They explained how interactions with real people with intellectual disabilities forces individuals into a scenario which is out of their comfort zone, arousing discomfort that prompts them to reflect and evaluate their previous beliefs and preconceptions (Sarmiento et al. 2016).

Cardiff University has developed a pioneering partnership with Hijinx theatre academy, a theatre company that trains actors with intellectual disabilities. Introduced in 2017, fourth year medical students attend a communication skills teaching session where they role play clinical scenarios with Hijinx's intellectually disabled actors. This allows students to take part in inclusive teaching, where individuals with intellectual disabilities have a direct role in the development and delivery of education about them.

Aims

1. To determine whether an inclusive teaching session changes student attitudes towards people with intellectual disabilities.
2. To investigate the impact of an inclusive teaching session in terms of student perceptions.

Methods

This was a mixed methods study. Ethical approval was granted by Cardiff University School of Medicine Ethics Committee.

The teaching session

The teaching session takes place in the fourth year of the medical curriculum. It has two parts, a communication skills workshop and a session by the Speech and Language therapy team, which involves teaching students about navigating difficulties in communication. This teaching runs at the end of a clinical placement block and runs three times during the academic year with different students.

There are three cases studies used for each session involving simulated patients. One has an intellectual disability and the other two roles (stroke and motor neurone disease) are played by actors without disabilities. Four actors from Hijinx Theatre Academy play the role of the intellectually disabled patient.

Although the teaching session is compulsory, taking part in the study was optional and students were given the opportunity to opt-out. Only 2 students formally opted out prior to the teaching session.

Part 1:

Participants completed the Attitudes Towards Disabled People Form B (ATDP-B), a validated, thirty item survey, measuring attitudes towards disabilities before and after the teaching session, to determine whether the teaching session changed their attitudes. Each item includes a statement regarding individuals with disabilities, with a Likert response scale (Yuker et al. 1996). Scores range from 0-180, with scores over 120 demonstrating accepting attitudes towards people with intellectual disabilities (Cervasio & Fatata-Hall 2013). Higher scores are achieved if respondents regards someone with a disability to be similar to the average person (Yuker et al. 1996).

Although the ATDP-B questionnaire is not specific to intellectual disabilities, the domains were designed to be broad enough to measure many different forms of disability, including intellectual disabilities (Yuker et al. 1996; Lam et al. 2010). The ATDP-B questionnaire has been used in prior studies to measure medical student attitudes towards individuals with intellectual disabilities (Laking 1988; Scott et al. 1997; Kritsotakis et al. 2017; Cervasio et al. 2013). A systematic review of tools measuring disabilities found the ATDP-B to be the most widely tested and used (Lam et al. 2010). Furthermore, a literature review found no valid and reliable tools available specifically for intellectual disabilities (Ryan et al. 2014). Using non-validated tools can result in measurement error and lack of confidence in conclusions (Dowrick et al. 2015).

The ATDP-B was found to be a reliable tool at measuring medical student attitudes in a previous study (α=.71) (Kritsotakis et al. 2017). Moreover, the creators of the tool conducted considerable research into the validity of the tool, and discussed this evidence in detail[1] (Yuker et al. 1996).

[1] Content validity was ensured through a literature review and item analysis. For construct validity, the ADTP-B was compared with different measures of prejudice and they found correlating scores. Criterion validity was determined through correlating ATDP-B scores with other tools measuring attitudes towards disabilities, such as the Interaction of Disabled Persons Scale, Social Distance Scale, Attitudes Towards the Physically Disabled form A and B, and many more.[47]

No ATDP-B questions were modified. The literature recommends against this as it can impact the validity of the tool (Juniper, 2009).

Part 2:

The ATDP-B questionnaire results informed further qualitative exploration, which consisted of 5 semi-structured individual (1:1) interviews and one focus group of nine participants. These participants were recruited by emailing all students that attended the teaching sessions regarding follow-up focus groups and interviews. Students were selected based on a convenience sampling approach due to the limited pool, interest and time available for the study.

ATDP-B scores were calculated and aggregated to look at the general proportion of positive versus negative responses for each question. The questions that produced conflicting and mixed views were discussed in the focus groups and interviews, to explore student perceptions and how the session challenged them. Data were analysed using Braun and Clarke's thematic analysis.

Both interviews and focus groups were used in the qualitive aspect of the study to ensure triangulation in methodology. This is to ensure validity in qualitative research with an underlying subtle realism ontological approach. Subtle realism draws from quantitative research to ensure validity and reliability in qualitative research (Bunge 1993; Given LM 2008)

Results

Part 1: ATDP-B Results

In the teaching session, 66 out of 110 attending students chose to participate in the study and filled out the ATDP-B questionnaires, equating to a response rate of 60%.

Table 1: Comparison of ATDP-B before and after scores.

The mean score for ATDP-B questionnaires filled out before the teaching session was 115 (*SD* = 14.5). The mean score for ATDP-B questionnaires filled out after the teaching session was 122 (*SD* = 17.2).

As the dependant variable of this study is continuous (ATDP-B score) and the independent is the time-variable, a paired t-test was used as the appropriate statistical test. This was to see if the improvement in attitude seen in the averages were significant or due to chance.

The paired sample t-test indicated that scores were significantly higher in the ATDP-B questionnaire completed after the teaching session (*M* = 122, *SD* = 17.2) than the scores in the ATDP-B questionnaire completed before the teaching session (*M* = 115 *SD* = 14.5), $t(65) = 6.20$, $p < .001$.

The average difference in ATDP-B scores before and after the teaching session was 6.92 (*SD* = 9.08) with 95% confidence interval (4.69, 9.16), $p < .001$.

As the confidence intervals did not contain 0, this suggested the true value of change was likely to be an average increase in score and hence an improvement in attitude. As the p value was <.05, the null hypothesis could be rejected. This showed that the improvement in ATDP-B scores after the teaching session was statistically significant. However, it is difficult to determine whether this is a clinically significant improvement. Research into the ATDP-B form has shown scores >120 represent accepting attitudes towards disabled individuals (Yuker et al. 1996). The improvement in ATDP-B scores seen after an intervention is similar to previous studies (Kritsotakis et al. 2017; Cervasio et al. 2013).

A sensitivity analysis was conducted after with a Wilcoxon signed rank test, which also confirmed that the null hypothesis should be rejected, ($Z = -5.44$, $p < .001$). The outliers were confirmed by checking the specific questionnaires and re-calculating scores, leading to the same results.

Part 2: Qualitative results

There were 224 minutes of data in total with fourteen participants. All 6 transcripts were analysed by the primary researcher.

Analysis began with an in-depth reading of all transcripts, with initial code ideas being considered. Transcripts were then coded on N-vivo software, with all codes being inductively developed. A mind-map was created to consider the relationship between codes, and this was used to separate them into initial categories of similar themes. The preliminary themes were then reviewed by going through the data in each code category, which highlighted the overlap between some codes as well as codes with little data available. The themes were then refined to represent a key concept. At this stage, many codes were removed from the themes, to ensure the themes were not too complex and represented a single issue that could be adequately interpreted. The methods used were proposed by Braun and Clarke to ensure comprehensive thematic analysis. (Braun & Clarke 2006).

All codes and themes were discussed with and reviewed by the secondary researcher. Interviews and focus groups were analysed together.

Figure 1: Overview of main themes and codes

Demographic data was not collected about participants in the quantitative aspect of the study, as the ATDP-B form was anonymised to control for social desirability bias. Figure 3 shows participant details for the qualitative aspect.

Table 2: Participant details for focus groups and interviews

Patient Contact

Seven participants discussed student anxiety and the link to experience. Participants with previous exposure to patients with intellectual disabilities said they felt comfortable communicating with intellectually disabled people. The participants without previous exposure gained more from the teaching as they learnt how to communicate with these patients. Both discussed how without prior experience, people would feel unequipped to communicate with individuals with intellectual disabilities.

Participants discussed preconceptions held, and how without prior exposure, they have to make their own judgements, which may be misplaced. These preconceptions stem from a lack of understanding and further feed into student anxiety.

"If you said learning disability, I'm struggling to picture in my head what that means." **(Participant 14)**

"When I initially went in there I was very, very anxious. I obviously had no training in it and I had limited experience with talking to anyone with intellectual disabilities. I was very confused about how I should approach the situation." Participant 2

Eight participants discussed student anxiety in a clinical context, arising from students feeling they have insufficient knowledge or competencies for their role as healthcare professionals.

"I suppose that's my biggest worry going to work as a doctor… I don't feel that well prepared for dealing with learning disability patients in challenging situations." **(Participant 13)**

This is in contrast to how participants spoke when they discussed the expectations upon doctors providing healthcare for patients with intellectual disabilities. Participants clearly differentiated between good and bad communication they had witnessed during placement with patients with intellectual disabilities.

"They might need information given in different mediums. They might need to hear things a few times… if that isn't addressed, I don't know if you could really have an effective consultation with a patient." **(Participant 4)**

When asked about why they thought the teaching session improved people's attitudes on the ATDP-B form, all participants discussed the effects of exposure and patient contact. Interacting with a person with the condition allowed students to see them as a real and nuanced individual rather than label them solely with the condition they have.

"It took down this mask of what I assumed the characteristics of someone with intellectual disability were." **(Participant 2)**

In summary, this theme represents the struggle of students with the identity of a "medical student." "Figured Worlds" theory is a socio-cultural theory that examines how labels such as "medical student" and "worlds" such as the clinical environment shape identities (Bennet et al. 2016). A qualitative study exploring this theory found that students that experienced positive and empowering clinical situations were able to develop the identity of a doctor and negative situations were disempowering for students (Dornan et al. 2015).

This phenomenon has been demonstrated in this study. Participants who discussed previous exposure were the ones who felt confident about future communication with patients with intellectual disabilities. However most participants admitted to little meaningful exposure before this teaching session, and they felt unequipped and anxious about the prospect of being the caregiver for these patients. Without positive experiences, students are unable to author themselves into the role of a doctor.

Furthermore, several previous studies have shown that medical students have negative attitudes towards individuals with intellectual disabilities (Kritsotakis et al 2016) (Martin et al. 2005) (Byron et al. 2005). Participant responses in this study suggest that these attitudes stem from a lack of exposure which means emotional understanding cannot be built. The participant discussion shows that a key factor in their changing attitudes was the development of empathy. In previous studies, medical students have identified patient contact to be integral in the development of empathy (Pohontsch et al. 2018; Sietz et al. 2017; Ahrweiler et al. 2014; Tavakol et al. 2012). The teaching session facilitates meaningful and authentic interactions with individuals with intellectual disabilities which allowing empathy to develop.

Equity in Healthcare

All participants discussed the different healthcare needs of individuals with intellectual disabilities. Six participants discussed how effective communication requires more time with individuals and the importance of involving family and carers.

Eight participants spoke about the importance of not just treating everybody equally in fears of acting politically correct, but rather how important it is to recognise that individuals with intellectual disabilities have greater needs. They emphasised that for individuals with intellectual disabilities to receive equal treatment, reasonable adjustments need to be made so this is possible.

"It's about providing equal opportunity. If that means spending longer with that patient because it's a harder challenge to do then that's completely justified." **(Participant 13)**

"You shouldn't think like, oh, I can't discriminate, I can't recognise that this person has a learning disability, like in some cases you have to recognise that that is going to impair them in some way and it's going to hold them back in some areas." (Participant 9)

All participants felt a communication barrier shaped people's attitudes towards intellectual disabilities and created inequality in healthcare. A common example was how communicating effectively with a patient with intellectual disabilities required more effort, and due to that increased effort many people do not try, resulting in negative attitudes towards people with intellectual disabilities.

"It's so easy to just chat to the person who's easier to communicate with rather than taking the extra couple of minutes to talk a bit slower, and communicate with the actual patient." **(Participant 1)**

The data suggests that the impact of the teaching session stems from its focus on communication, as that is the biggest barrier that participants identified in providing equal healthcare to patients with intellectual disabilities. The literature reflects this and a systematic review identified communication to be a priority in training healthcare professionals with regards to intellectual disabilities (Hemm et al. 2014). Participants discussed a prior reluctance to talk to patients with intellectual disabilities on clinical placements because they were not sure how to communicate with them. They felt more confident after the teaching, because they understood the communication barriers and how to overcome them.

Furthermore, it raised an important point about equity in healthcare. It showed how students feel a pressure to treat everyone equally because of a culture of political correctness, and this can lead to the opposite result. This pressure to be egalitarian has been found in a previous study on intellectual disabilities (Ryan et al. 2015). However, if individuals with intellectual disabilities are treated exactly the same as the general population, it will result in many unmet health needs. Participants correctly highlighted the importance of making adjustments for equitable healthcare.

Curriculum Content

All participants discussed a lack of exposure to intellectual disabilities in the curriculum. Participants felt this was not a problem specific to intellectual disabilities but rather a broader issue of learning during clinical years. Nine participants talked specifically about how the quality of clinical placements and what was learnt on them was unpredictable.

"You just have to wait until you might randomly stumble upon someone to practice." **(Participant 2)**

I think a lot of medical school is variable, because it all depends on where you're on placement, who you meet, what doctors you're with and things." (Participant 1)

Participants expressed a desire to be more challenged by this session. A simulated teaching session is a safe environment to learn and make mistakes, and participants discussed how difficult scenarios

made them more confident approaching real life situations. Furthermore, they wanted equipping for more challenging situations as a doctor. Participants felt students roleplaying scenario with the Hijinx actor had the best learning opportunity as it was the pressure of a real person with the condition. Those roleplaying with actors simulating other clinical roles felt comfortable and gained less.

"So maybe having a couple of more challenging ones… and then people might feel a bit more confident then when they go out on the wards and they find someone with a disability."
(Participant 3)

Discussion

This study sought to determine whether a teaching session changed student attitudes towards people with intellectual disabilities. Statistical analysis of the quantitative data found scores were significantly higher after the teaching, suggesting the session was successful in improving attitudes.

This is a significant finding as the attitudes of healthcare professionals are one of the root causes for the health inequalities seen in intellectual disabilities (Hemm et al. 2014). They impact the quality of care delivered, as negative attitudes lead to unwitting discrimination, neglect and negative stereotyping of patients (Mencap, 2007) (Kritsotakis et al. 2017).

The second aim of this study was to qualitatively explore the impact of the teaching session. Many previous studies have identified that medical students can have negative attitudes towards people with intellectual disabilities, and that direct exposure with this group can improve their attitudes (Kritsotakis et al. 2017; Kahtan et al. 1994; Tracy et al. 2015; Lennox et al; 1999; Ryan et al. 2014). However, a literature review found that minimal qualitative studies had been conducted on this topic (Ryan et al. 2014). The mixed methods approach was a strength of the study as the combination allowed qualitative exploration of the quantitative results on why the teaching session works. This allowed a greater depth of understanding to be built on this topic.

Furthermore, this study illustrates why direct clinical exposure improves student attitudes. The teaching session allowed students to develop a professional identity. They were taught how to overcome the communication barriers, resulting in a positive and authentic interaction with an intellectually disabled patient, which allowed them to author themselves into the identity of a "doctor." Furthermore, direct exposure prompts reflection and emotional understanding in the students, producing a development of empathy.

Limitations

It is difficult to determine whether the mean change of 6.92 is a clinically significant improvement. This could be determined through assessment of professional practice, which was beyond the scope of this study. Furthermore, a future study could look at following up the same cohort of students, to see if attitudes are maintained over time. Previous studies have looked at changes in attitudes and found that although improvements in attitudes drop from the initial improvement, they do not return to baseline (Cervasio et al. 2013).

Sampling is a limitation of both aspects of the study. In the quantitative aspect, there is the issue of self-selection bias and lack of randomisation. This is due to the limitations in time and scope of the study, and future studies should look to control for this variable to investigate if this has an impact on results obtained. In the qualitative aspect the sample selection involved convenience sampling. Furthermore, there is no comparison group. However, as the independent variable in this study is time, the study design does not require a control group as the participants act as their own control (Cook et al. 1979).

Although the survey itself was not specific to intellectual disabilities, due to a lack of appropriate resources, the mixed methods approach meant that these questions in validity could be questioned and examined in the qualitative aspect, both from the researchers and participants perspectives. Furthermore, although the teaching session itself was not specific to intellectual disabilities, its main focus was communication and how to overcome barriers in consultations. Communication was the main priority identified that was required in training healthcare professionals in intellectual disabilities. (Hemm et al. 2014).

Another limitation social desirability bias. Although it was minimised in the ATDP-B forms through anonymity, and the ATDP-B has been compared to social desirability scales with results finding non-significant correlations, participants may have censored their true thoughts in the interviews and focus group (Yuker et al. 1996). However in the interviews and focus group, participants appeared candid, discussing thoughts they considered controversial. Triangulation in the data collection methods also promoted this, as the interviews allowed in-depth understanding of individual perceptions whilst the focus group provided solidarity in group opinion.

Future recommendations

An informal session in pre-clinical years would be beneficial for students as it would allow exposure to intellectual disabilities before any students have begun clinical placements, teaching them the necessary communication skills. This would allow students to have positive experiences with these patients on clinical placements and develop empathy early on.

A clinical session during placement years is important as some participants discussed their lack of understanding around intellectual disabilities. This would be beneficial for students in later years as it would facilitate the development of a professional identity. Including cases of complicated clinical scenarios would not only challenge students, but also develop their confidence.

An advantage of this teaching structure is that it results in repeated teaching on intellectual disabilities throughout the curriculum, which the findings suggest further enhances student learning. This is a gap for future research, as no studies have looked at the effect of repeated teaching on intellectual disabilities on the same cohort of participants.

Another critical gap is the absence of tools that measure attitudes specifically towards intellectual disabilities. Future research could develop this alongside determining what a clinically significant change in attitude is.

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TABLE 1:

	ATDP-B completed before the teaching session	ATDP-B completed after the teaching session
N	66	66
Mean	115	122
Std. Deviation	14.5	17.2
Minimum	79	79
Maximum	144	157
Range	65	78

Table 1: comparison of ATDP-B before and after scores

FIGURE 1:

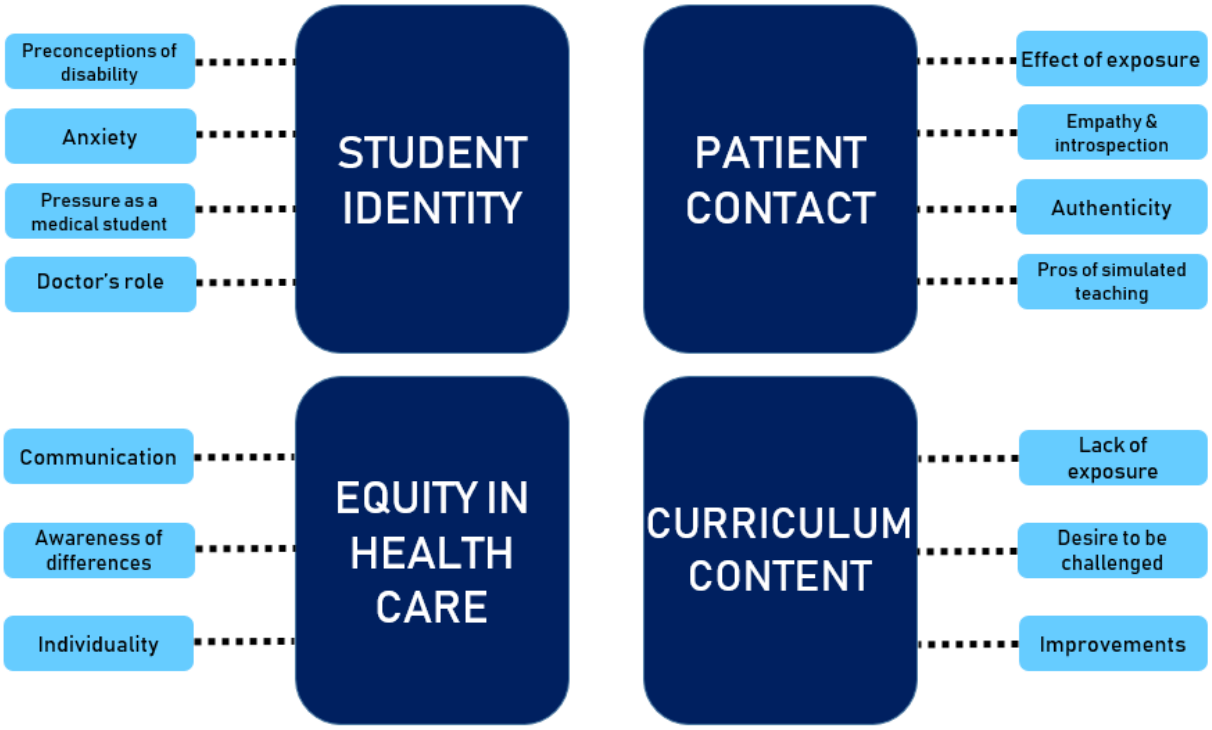

Figure 1: overview of main themes and

TABLE 2:

Participants	Interview/Focus group	Length of data collection	Previous experience with ID	Description
Participant 1	Interview	00:32:59	Y	Female fourth year medical student
Participant 2	Interview	00:30:13	N	Male fourth year medical student
Participant 3	Interview	00:38:16	N	Female fourth year medical student
Participant 4	Interview	00:25:43	Y	Female fourth year medical student
Participant 5	Interview	00:31:58	N	Male fourth year medical student
Participant 6	Focus group	01:05:54	Y	Female fourth year medical student
Participant 7	Focus group	01:05:54	N	Female fourth year medical student
Participant 8	Focus group	01:05:54	Y	Female fourth year medical student
Participant 9	Focus group	01:05:54	Y	Female fourth year medical student
Participant 10	Focus group	01:05:54	N	Female fourth year medical student
Participant 11	Focus group	01:05:54	N	Female fourth year medical student
Participant 12	Focus group	01:05:54	N	Male fourth year medical student
Participant 13	Focus group	01:05:54	Y	Male fourth year medical student
Participant 14	Focus group	01:05:54	Y	Female fourth year medical student

Table 2: Participants of focus group and interviews