

SKRIPSI

**PENGETAHUAN MAHASISWA PROGRAM STUDI
PENDIDIKAN DOKTER DI INDONESIA TERHADAP
DIFFERENCES OF SEX DEVELOPMENT (DSD)**



ANNISA UMARDIYAH

04011282025127

FAKULTAS KEDOKTERAN

UNIVERSITAS SRIWIJAYA

2023

SKRIPSI

PENGETAHUAN MAHASISWA PROGRAM STUDI PENDIDIKAN DOKTER DI INDONESIA TERHADAP DIFFERENCES OF SEX DEVELOPMENT (DSD)

Diajukan untuk memenuhi salah satu syarat memperoleh gelar

Sarjana Kedokteran (S. Ked)



Oleh:

ANNISA UMARDIYAH

04011282025127

FAKULTAS KEDOKTERAN

UNIVERSITAS SRIWIJAYA

2023

HALAMAN PENGESAHAN

PENGETAHUAN MAHASISWA PROGRAM STUDI
PENDIDIKAN DOKTER DI INDONESIA TERHADAP
DIFFERENCES OF SEX DEVELOPMENT (DSD)

LAPORAN AKHIR SKRIPSI

Diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana
Kedokteran di Universitas Sriwijaya

Oleh:

Annisa Umardiyah

04011282025127

Palembang, 24 November 2023

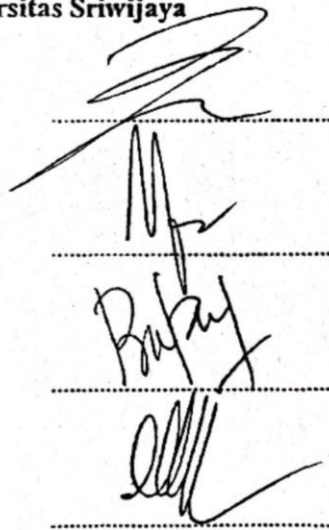
Fakultas Kedokteran Universitas Sriwijaya

Pembimbing I
dr. Ziske Maritska, M.Si, Med
NIP. 198403262010122004

Pembimbing II
dr. Nita Parisa, M.Bmd
NIP. 198812132014042001

Penguji I
dr. Bintang Arrovantri Prananjaya, Sp. KJ
NIP. 198705022014042002

Penguji II
dr. Eka Febri Zulissetiana, M.Bmd
NIP. 198802192010122001



Koordinator Program Studi
Pendidikan Dokter

dr. Susilawati, M.Kes
NIP 19780227 201012 2 001



Mengetahui
Wakil Dekan I

Prof. Dr. dr. Irfannuddin, Sp.KO., M.Pd.Ked
NIP 19730613 199903 1 001

HALAMAN PERSETUJUAN

Karya tulis ilmiah berupa laporan akhir skripsi dengan judul “Pengetahuan Mahasiswa Program Studi Pendidikan Dokter di Indonesia terhadap Differences of Sex Development (DSD)” telah dipertahankan di hadapan Tim Penguji Karya Tulis Ilmiah Program Studi Pendidikan Dokter Fakultas Kedokteran Universitas Sriwijaya pada tanggal 24 November 2023.

Palembang, 24 November 2023

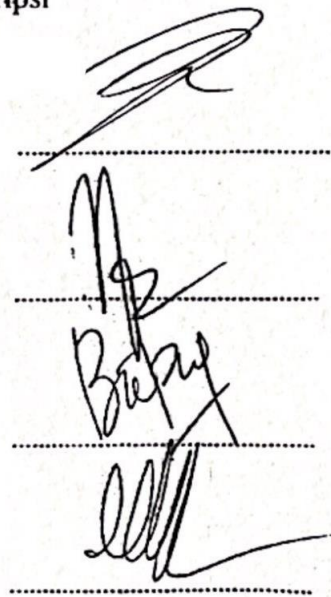
Tim Penguji Karya Ilmiah berupa laporan akhir skripsi

Pembimbing I
dr. Ziske Maritska, M.Si, Med
NIP. 198403262010122004

Pembimbing II
dr. Nita Parisa, M.Bmd
NIP. 198812132014042001

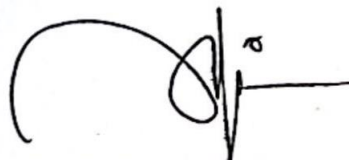
Penguji I
dr. Bintang Arroyantri Prananjaya, Sp. KJ
NIP. 198705022014042002

Penguji II
dr. Eka Febri Zulissetiana, M.Bmd
NIP. 198802192010122001



Mengetahui,

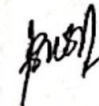
Wakil Dekan I



Prof. Dr. dr. Irfannuddin, Sp.KO., M.Pd.Ked
NIP 19730613 199903 1 001



Koordinator Program Studi
Pendidikan Dokter



dr. Susilawati, M.Kes.
NIP 19780227 201012 2 001

HALAMAN PERNYATAAN INTEGRITAS

Yang bertanda tangan di bawah ini :

Nama : Annisa Umardiyah

NIM : 04011282025127

Judul : Pengetahuan Mahasiswa Program Studi Pendidikan Dokter di Indonesia terhadap *Differences of Sex Development (DSD)*

Menyatakan bahwa Skripsi saya merupakan hasil karya sendiri didampingi tim pembimbing dan bukan hasil penjiplakan/plagiat. Apabila ditemukan unsur penjiplakan/plagiat dalam Skripsi ini, maka saya bersedia menerima sanksi akademik dari Universitas Sriwijaya sesuai aturan yang berlaku.

Demikian, pernyataan ini saya buat dalam keadaan sadar dan tanpa ada paksaan dari siapapun.



Palembang, 17 November 2023



Annisa Umardiyah

ABSTRAK

PENGETAHUAN MAHASISWA PROGRAM STUDI PENDIDIKAN DOKTER DI INDONESIA TERHADAP DIFFERENCES OF SEX DEVELOPMENT (DSD)

(Annisa Umardiyah, 24 November 2023, 112 halaman)

Fakultas Kedokteran Universitas Sriwijaya

Latar Belakang: *Differences of Sex Development* (DSD) merujuk kepada individu yang memiliki perbedaan dalam karakteristik seksual biologis mereka yang tidak umum dan tidak dapat dengan jelas dikategorikan sebagai laki-laki atau perempuan. Pengetahuan tidak adekuat yang dimiliki seorang calon dokter dapat menyebabkan komplikasi kesehatan dan dampak negatif pada kualitas hidup pasien. Penelitian ini bertujuan untuk mengidentifikasi pengetahuan mahasiswa program studi pendidikan dokter di Indonesia terhadap *Differences of Sex Development* (DSD).

Metode: Penelitian ini merupakan penelitian deskriptif observasional dengan desain studi *cross-sectional*. Sampel merupakan mahasiswa program studi pendidikan dokter di Indonesia yang memenuhi kriteria inklusi dan diambil dengan menggunakan teknik *cluster sampling*. Instrumen pada penelitian ini adalah Kuesioner Pengetahuan terhadap *Differences of Sex Development* (DSD).

Hasil: Hasil penelitian menunjukkan mahasiswa yang memiliki pengetahuan adekuat (78,8%). Persentase pengetahuan adekuat pada usia ≤ 20 tahun (75,9%), >20 tahun (80,1%). Lalu pada perempuan (80,9%), pada laki-laki (74,7%). Selanjutnya pre-klinik (76%), klinik (83,3%). IPK $\geq 3,00$ (79,1%), IPK $< 3,00$ (75,6%). Asal universitas negeri (79,5%), swasta (77,9%). Akreditasi unggul (79,1%), baik sekali (77,3%), baik (78,7%). Wilayah satu (80,2%), wilayah dua (78,7%), wilayah tiga (79,8%), wilayah empat (76,8%). Tanpa riwayat keluarga (78,7%). Dengan riwayat interaksi (80%), tanpa riwayat interaksi (78,7%).

Kesimpulan: Mahasiswa program studi pendidikan dokter di Indonesia memiliki pengetahuan adekuat terhadap *Differences of Sex Development* (DSD).

Kata Kunci: Differences of Sex Development (DSD), Pengetahuan, Kualitas Hidup

ABSTRACT

**KNOWLEDGE TOWARDS DIFFERENCES OF SEX
DEVELOPMENT (DSD) AMONG MEDICAL STUDENTS IN
INDONESIA**

(Annisa Umardiyah, 24 November 2023, 112 pages)

Faculty of Medicine Sriwijaya University

Background: Differences of Sex Development (DSD) refers to individuals with differences in their biological sexual characteristics that are not common and cannot be categorized as male or female. Inadequate knowledge and negative attitudes that a prospective doctor has can lead to further health complications, delays in needed treatment, and a negative impact on the patient's quality of life.

Methods: This study is a descriptive observational study with a cross-sectional design. The samples are medical students in Indonesia that apply inclusion criteria by taking samples using the cluster sampling technique. The instrument in this study is the Knowledge towards Differences of Sex Development (DSD) Questionnaire.

Results: The results showed that students had adequate knowledge (78,8%). Percentage of adequate knowledge and positive attitude at the age of ≤ 20 years (75,9%), >20 years (80,1%). Then in women (80,9%), in men (74,7%). Then pre-clinical (76%), clinical (83,3%). Grades $\geq 3,00$ (79,1%), grades $<3,00$ (75,6%). From public universities (99,5%)(79,5%), private (77,9%). Excellent accreditation (79,1%), very good (77,3%), and good (78,7%). Region one (80,2%), region two (78,7%), region three (79,8%), region four (76,8%). Without a family history (78,7%). With a history of interaction (80%), without a history of interaction (78,7%).

Conclusion: Medical students in Indonesia have adequate knowledge towards Differences of Sex Development (DSD).

Keywords: Differences of Sex Development (DSD), Knowledge, Quality of Life

RINGKASAN

**PENGETAHUAN MAHASISWA PROGRAM STUDI
PENDIDIKAN DOKTER DI INDONESIA TERHADAP
DIFFERENCES OF SEX DEVELOPMENT (DSD)**

Karya tulis ilmiah berupa skripsi, 24 November 2023

Annisa Umardiyah, dibimbing oleh dr. Ziske Maritska, M.Si, Med and dr. Nita Parisa, M.Bmd

Program Studi Pendidikan Dokter, Fakultas Kedokteran, Universitas Sriwijaya

xx + 112 halaman, 17 tabel, 2 gambar, 9 lampiran

Differences of Sex Development (DSD) adalah istilah yang digunakan untuk merujuk kepada individu yang memiliki perbedaan dalam karakteristik seksual biologis mereka yang tidak umum dan tidak dapat dengan jelas dikategorikan sebagai laki-laki atau perempuan. Pengetahuan yang adekuat terkait *Differences of Sex Development* sangat perlu dimiliki oleh mahasiswa kedokteran. Kualitas hidup pasien DSD amat dipengaruhi dari penegakkan diagnosis dini dan juga penentuan tatalaksana yang tepat. Penelitian ini bertujuan untuk mengidentifikasi pengetahuan mahasiswa program studi pendidikan dokter di Indonesia terhadap *Differences of Sex Development (DSD)*.

Penelitian ini merupakan penelitian deskriptif observasional dengan desain studi *cross-sectional*. Sampel merupakan mahasiswa program studi pendidikan dokter di Indonesia yang menerapkan kriteria inklusi dan diambil dengan teknik cluster sampling. Instrumen pada penelitian ini adalah Kuesioner Pengetahuan terhadap *Differences of Sex Development (DSD)*.

Hasil penelitian ini memperlihatkan persentase mahasiswa dengan pengetahuan adekuat sejumlah (78,7%). Berdasarkan usia, pengetahuan adekuat tertinggi pada usia >20 tahun (80,1%). Lalu berdasarkan jenis kelamin, pada perempuan mendapatkan hasil tertinggi (80,9%). Selanjutnya berdasarkan tingkat studi, tertinggi pada klinik (83,3%). Lalu, berdasarkan IPK, yaitu tertinggi pada IPK $\geq 3,00$ (79,1%), Berdasarkan tipe universitas, yaitu pada mahasiswa yang berasal dari universitas negeri (79,5%). Berdasarkan akreditasi program studi, tertinggi pada prodi dengan akreditasi unggul (79,1%). Lalu berdasarkan wilayah kerja ISMKI, persentase tertinggi adalah wilayah satu (80,2%), dan wilayah tiga (79,8%).

Untuk adanya riwayat keluarga hanya didapatkan pada kelompok tanpa riwayat keluarga (78,7%). Berdasarkan riwayat interaksi, persentase tertinggi didapatkan pada kelompok dengan riwayat interaksi (80%).

Tidak ada perbedaan yang jauh antar masing-masing kategori. Sebagian besar mahasiswa kedokteran di Indonesia memiliki pengetahuan adekuat terhadap *Differences of Sex Development* (DSD).

Kata Kunci: Differences of Sex Development (DSD), Pengetahuan, Kualitas Hidup

SUMMARY

KNOWLEDGE TOWARDS DIFFERENCES OF SEX DEVELOPMENT (DSD) AMONG MEDICAL STUDENTS IN INDONESIA

Scientific Paper in the form of Skripsi, November 24, 20223

Annisa Umardiyah: supervised by dr. Ziske Maritska, M.Si, Med and dr. Nita Parisa, M.Bmd

Medical Science Department, Faculty of Medicine, Sriwijaya University

xx + 112 pages, 17 tables, 2 pictures, 9 attachments

Differences of Sex Development (DSD) is a term used to refer to individuals with differences in their biological sexual characteristics that are not common and cannot be categorized as male or female. Adequate knowledge regarding DSD is very necessary for medical students to have. The quality of life of DSD patients is greatly influenced by early diagnosis and the determination of appropriate management.

This study is a descriptive observational study with a cross-sectional study design. The sample is a medical school in Indonesia that applies inclusion criteria and is taken using a cluster sampling technique. The instrument in this study was the Knowledge towards Differences of Sex Development (DSD) Questionnaire.

The results of this study showed the percentage of students with adequate knowledge (78,7%). Based on age, adequate knowledge and positive attitude were highest at the age of >20 years (80,1%). Then based on gender, women got the highest result (80,9%). Furthermore, based on the level of study, the highest was at clinical (83,3%). Then based on grades, is highest on grades $\geq 3,00$ (79,1%), Based on the type of university, students from state universities (79,5%). Based on the accreditation of medical schools, the highest were medical schools with excellent accreditation (79,1%). Then based on the working area of ISMKI, the highest percentages were in region one (80,2%) and region three (79,8%). For the presence of a family history, the result was only found in the group without a family history (78,7%). Then, with the history of interaction, the highest percentage was found in the groups with a history of interaction (80%).

There is a little difference between each category. Most medical students in Indonesia have adequate knowledge towards Differences of Sex Development (DSD).

Keywords: Differences of Sex Development (DSD), Knowledge, Quality of Life

KATA PENGANTAR

Puji syukur saya panjatkan kehadirat Allah SWT atas berkah, rahmat, dan karunia-Nya sehingga saya dapat menyelesaikan skripsi yang berjudul “Pengetahuan Mahasiswa Program Studi Pendidikan Dokter terhadap *Differences of Sex Development (DSD)*”. Skripsi ini disusun sebagai syarat memperoleh gelar Sarjana Kedokteran pada Program Studi Pendidikan Dokter Fakultas Kedokteran Universitas Sriwijaya. Saya menyadari terdapat banyak kendala yang dihadapi, namun berkat arahan, bimbingan, dan bantuan dari berbagai pihak, skripsi ini dapat terselesaikan. Oleh karena itu, dengan ketulusan hati saya mengucapkan terima kasih sebesar-besarnya kepada:

1. Abi Suandi dan Umi Elly Oktavia yang selalu memberikan dukungan secara moril, materil, serta doa yang senantiasa mengantarkan penulis hingga menyelesaikan tugas akhir ini.
2. Dosen pembimbing yang saya hormati, dr. Ziske Maritska, M.Si, Med dan dr. Nita Parisa, M.Bmd yang telah memberikan waktu, ilmu, dukungan, dan bimbingannya.
3. Dosen Penguji yang saya hargai, dr. Bintang Arroyantri Prananjaya, Sp.KJ dan dr. Eka Febri Zulissetiana, M.Bmd, yang telah memberikan saran, kritik, dan masukan yang membangun.
4. Saudara tercinta, Ainun Mardiyah, Amirah Salsabila, dan Muhammad Hasbi, serta keponakan tercinta, Jennaira Shazfa Haramain yang selalu memberikan dukungan, kasih sayang, dan semangat yang tiada henti.
5. Teristimewa, Ibrahim Muhammad Yusuf yang telah kebersamai penulis dan memberi arti selama proses penyusunan serta pengerjaan skripsi ini sehingga dapat terselesaikan dengan baik.
6. Sahabat tersayang serta teman seperjuangan, Syarifah Sundus Fitria dan Amira Riani Khansa, yang selalu ada dan bersedia mendengarkan segala keluh kesah penulis serta membantu sehingga skripsi ini selesai.

7. Teman-teman terdekat, Nadhifa Afla Izdihariyah, Jihan Yumna Salsa, dan Fatiah Zahra Adinda yang tidak pernah luput mendukung dan memberi semangat selama penulisan skripsi ini.
8. Keluarga besar, Residen Kikim, terkhusus bagi Sundus, Miwa, Naje, Mimik, Pai, Ejak, Rehan, Jo, Ibam, Arka atas dukungan dan semangat yang diberikan.
9. Rumah tersayang, Kost Biru, khususnya kepada Pak Tris, Kak Safa, Amirah, Hani, Amik, Kak Aidi, Kak Malvin, Kak Chelsea, Kak Sofi, Kak Arnold, Kak Nofal, dan Ko Vincent yang selalu memberikan semangat, dukungan, serta bimbingan dalam perjalanan skripsi ini.
10. Serta pihak lainnya yang tidak dapat saya sebutkan satu per satu.

Saya menyadari bahwa penulisan skripsi ini masih jauh dari kesempurnaan. Saya memohon kritik dan saran atas kekurangan dan ketidaksempurnaan dari skripsi ini. Saya berharap skripsi ini dapat bermanfaat.

Palembang, 17 November 2023



Annisa Umardiyah

DAFTAR ISI

Halaman Pengesahan	Error! Bookmark not defined.
Halaman Pernyataan Integritas	Error! Bookmark not defined.
Abstrak	vi
Abstract	vii
Ringkasan	viii
Summary	x
Kata Pengantar.....	xii
Daftar Isi.....	xiv
Daftar Tabel.....	xvii
Daftar Gambar	xix
Daftar Lampiran.....	xx
Daftar Singkatan	xxi
Bab 1 Pendahuluan	1
1.1 Latar Belakang	1
1.2 Rumusan Masalah	3
1.3 Tujuan Penelitian.....	3
1.3.1 Tujuan Umum	3
1.3.2 Tujuan Khusus	3
1.4 Manfaat Penelitian.....	3
1.4.1 Manfaat Teoritis	3
1.4.2 Manfaat Praktis	3
1.4.3 Manfaat Bagi Pasien.....	4
Bab 2 Tinjauan Pustaka.....	5
2.1 Definisi Differences Of Sex Development (DSD).....	5
2.2 Epidemiologi Differences Of Sex Development (DSD)	5
2.3 Klasifikasi Differences Of Sex Development (DSD).....	6
2.4 Etiopatogenesis Differences Of Sex Development (DSD).....	7
2.5 Faktor Risiko Differences Of Sex Development (DSD)	8

2.6	Manifestasi Klinis Differences Of Sex Development (DSD).....	9
2.7	Diagnosis Differences Of Sex Development (DSD).....	11
2.7.1.	Anamnesis.....	12
2.7.2.	Pemeriksaan Fisik	12
2.7.3.	Pemeriksaan Penunjang	13
2.8	Tatalaksana Differences Of Sex Development (DSD).....	13
2.9	Prognosis Differences Of Sex Development (DSD)	15
2.10	Komunikasi, Informasi, Dan Edukasi (KIE) Differences Of Sex Development (DSD)	15
2.11	Perilaku Terhadap Differences Of Sex Development (DSD).....	16
2.12	Pengetahuan Terhadap Differences Of Sex Development (DSD).....	20
2.13	Kerangka Teori.....	22
Bab 3	Metode Penelitian	23
3.1	Jenis Penelitian.....	23
3.2	Waktu Dan Tempat Penelitian	23
3.3	Populasi Dan Sampel.....	23
3.3.1	Populasi	23
3.3.2	Sampel	23
3.3.3	Kriteria Inklusi Dan Eksklusi.....	25
3.4	Variabel Penelitian	26
3.5	Definisi Operasional	27
3.6	Cara Pengumpulan Data	29
3.6.1	Hasil Uji Validitas Kuesioner	29
3.6.2	Hasil Uji Reliabilitas Kuesioner.....	30
3.7	Cara Pengolahan Dan Analisis Data.....	31
3.8	Alur Kerja Penelitian	32
Bab 4	Hasil dan Pembahasan	33
4.1	Hasil Penelitian	33
4.1.1	Hasil Karakteristik Sosiodemografi.....	33
4.1.2	Hasil Distribusi Pengetahuan Terhadap Differences Of Sex Development (DSD).....	35

4.1.3 Hasil Distribusi Pengetahuan Berdasarkan Karakteristik Sosiodemografi.....	36
4.1.4 Hasil Distribusi Skor Perbutir Kuesioner Pengetahuan Terhadap Differences Of Sex Development (DSD).....	43
4.1.5 Hasil Distribusi Sumber Informasi Mengenai Differences Of Sex Development (DSD).....	45
4.2 Pembahasan.....	45
4.2.1 Distribusi Pengetahuan Berdasarkan Karakteristik Sosiodemografi ..	46
4.2.2 Distribusi Pengetahuan Terhadap Differences Of Sex Development (DSD) 54	
4.2.3 Distribusi Skor Perbutir Kuesioner Pengetahuan Terhadap Differences Of Sex Development (DSD).....	56
Bab 5 Kesimpulan dan Saran	61
5.1 Kesimpulan	61
5.2 Saran	62
Daftar Pustaka	63
Lampiran	82
Biodata	96

DAFTAR TABEL

Tabel 2.1 Klasifikasi DSD	7
Tabel 2.2 Keragaman Manifestasi Klinis DSD Pada Setiap Tingkatan Usia.....	10
Tabel 3.1 Definisi Operasional.....	28
Tabel 3.2 Interpretasi Hasil Uji Validitas Berdasarkan Signifikansi.....	31
Tabel 3.3 Interpretasi Hasil Uji Validitas Berdasarkan Perbandingan r_{hitung} dan r_{tabel}	31
Tabel 4.1 Distribusi Karakteristik Sosiodemografi Mahasiswa PSPD di Indonesia	47
Tabel 4.2 Distribusi Tingkat Pengetahuan Mahasiswa PSPD di Indonesia Terhadap DSD	50
Tabel 4.3 Distribusi Pengetahuan Mahasiswa PSPD di Indonesia Terhadap DSD Berdasarkan Usia	50
Tabel 4.4 Distribusi Pengetahuan Mahasiswa PSPD di Indonesia Terhadap DSD Berdasarkan Jenis Kelamin	51
Tabel 4.5 Distribusi Pengetahuan Mahasiswa PSPD di Indonesia Terhadap DSD Berdasarkan Tingkat Studi.....	52
Tabel 4.6 Distribusi Pengetahuan Mahasiswa PSPD di Indonesia Terhadap DSD Berdasarkan IPK.....	53
Tabel 4.7 Distribusi Pengetahuan Mahasiswa PSPD di Indonesia Terhadap DSD Berdasarkan Tipe Universitas.....	54
Tabel 4.8 Distribusi Pengetahuan Mahasiswa PSPD di Indonesia Terhadap DSD Berdasarkan Akreditasi Prodi.....	55
Tabel 4.9 Distribusi Pengetahuan Mahasiswa PSPD di Indonesia Terhadap DSD Berdasarkan Wilayah Kerja ISMKI.....	56

Tabel 4.10 Distribusi Pengetahuan Mahasiswa Mahasiswa PSPD di Indonesia Terhadap DSD Berdasarkan Riwayat Keluarga	57
Tabel 4.11 Distribusi Pengetahuan Mahasiswa PSPD di Indonesia Terhadap DSD Berdasarkan Riwayat Interaksi.....	58
Tabel 4.12 Hasil Distribusi Skor Peritem Kuesioner Pengetahuan Terhadap DSD.....	58

DAFTAR GAMBAR

Gambar 1. Bayi baru lahir dengan <i>congenital adrenal hyperplasia</i> (CAH) menampakkan ambiguitas genital.....	12
Gambar 2. Mikropenis dengan hipospadia.....	12

DAFTAR LAMPIRAN

Lampiran 1. Lembar Permohonan Kesiediaan Menjadi Responden	98
Lampiran 2. Lembar Persetujuan.....	100
Lampiran 3. Kuesioner Pengetahuan terhadap Differences of Sex Development (DSD)	101
Lampiran 4. Hasil Uji Validitas dan Reliabilitas.....	103
Lampiran 5. Hasil Analisis SPSS	104
Lampiran 6. Sertifikat Etik Layak Penelitian	109
Lampiran 7. Surat Izin Penelitian	110
Lampiran 8. Lembar Konsultasi	111

DAFTAR SINGKATAN

AIS	: Androgen Insensitivity Syndrome
AMH	: Anti-Mullerian Hormon
CAH	: Congenital Adrenal Hyperplasia
Daring	: Dalam jaringan
DCCR	: <i>Danish Cytogenetic Central Registry</i>
DSD	: <i>Differences of Sex Development</i>
GPE	: General Physical Examination
HAK	: Hiperplasia Adrenal Kongenital
NIH	: <i>National Institute of Health</i>

BAB 1

PENDAHULUAN

1.1 Latar Belakang

Salah satu pemeriksaan awal yang dilakukan pada bayi baru lahir adalah pemeriksaan jenis kelamin. Akan tetapi, pemeriksaan yang tampaknya sederhana ini dapat menjadi suatu tantangan tersendiri bagi tenaga kesehatan jika ditemukan anomali pada genitalia eksterna yang menimbulkan keraguan dan kerancuan.¹ Kerancuan organ kelamin dapat dicurigai apabila organ penis terlihat lebih kecil atau klitoris lebih besar.² Kerancuan alat genitalia eksterna ini pada zaman dahulu sering dikenal dengan istilah *intersex*, *ambiguous genitalia*, dan *sex reversal*.³ Akan tetapi sejak tahun 2005, istilah tersebut digantikan menjadi *Differences of Sex Development* atau DSD.⁴

Menurut *National Institute of Health* (NIH), *Differences of Sex Development* (DSD) adalah istilah yang digunakan untuk merujuk kepada individu yang memiliki perbedaan dalam karakteristik seksual biologis mereka yang tidak umum dan tidak dapat dengan jelas dikategorikan sebagai laki-laki atau perempuan.⁵ Perkiraan frekuensi kasus *Differences of Sex Development* (DSD) berada dalam kisaran 1:4500 hingga 1:5500 kelahiran.⁶ Kondisi *Differences of Sex Development* (DSD) ini memiliki beberapa tipe, yaitu 46,XY, 46,XX, dan *sex chromosome* DSD.⁷

Di samping masalah kesehatan yang dapat mempengaruhi berbagai sistem organ selain sistem reproduksi, pasien DSD sering mengalami stigma dan diskriminasi dari masyarakat sekitarnya.⁸ Terdapat penelitian di Turki yang menyatakan bahwa kondisi DSD pada pasien bayi dapat menimbulkan berbagai masalah, seperti gangguan identitas perkembangan seksual dan masalah psikososial.⁹ Tenaga kesehatan perlu memberikan informasi yang komprehensif dan melakukan diskusi yang terbuka tentang dampak dari terapi pada DSD terhadap kesuburan dan kualitas hidup pasien.¹⁰ Hal ini bertujuan untuk memilih perawatan yang paling tepat sesuai dengan kebutuhan pasien.¹¹

Pengetahuan yang adekuat terkait *Differences of Sex Development* sangat perlu dimiliki oleh mahasiswa kedokteran. Kualitas hidup pasien DSD amat dipengaruhi dari penegakkan diagnosis dini dan juga penentuan tatalaksana yang tepat. Seorang dokter atau tenaga kesehatan perlu untuk memiliki kemampuan adekuat yang sudah sewajarnya dipupuk dan dibina sejak masa pendidikan. Jika tenaga kesehatan memberikan hasil diagnosis yang tidak akurat atau terapi yang tidak tepat, pasien dengan DSD mungkin akan menerima perawatan yang tidak sesuai dengan kebutuhan mereka. Hal ini dapat menyebabkan komplikasi kesehatan lebih lanjut dan dampak negatif pada kualitas hidup pasien, contohnya ketika seorang anak mengalami keluhan genitalia ambigu dan didiagnosis dengan Hiperplasia Adrenal Kongenital (HAK) yang dapat mengakibatkan beberapa komplikasi seperti krisis adrenal.¹² Sebagai contoh lain, penundaan dalam mendiagnosis Sindrom Klinefelter dapat mengakibatkan pasien kehilangan kesempatan untuk melakukan intervensi yang tepat terhadap hipogonadisme, gangguan kognitif, dan faktor-faktor psikososial.¹³

Mahasiswa kedokteran yang merupakan salah satu garda terdepan dalam pelayanan kesehatan diharapkan akan dapat memberikan perawatan yang lebih baik, komprehensif, dan berempati kepada pasien DSD dengan dibekali oleh pemahaman dan pengetahuan yang lebih baik tentang DSD. Hal ini akan berdampak positif pada kualitas hidup pasien dan memastikan bahwa setiap individu menerima perawatan kesehatan yang memenuhi kebutuhan dan hak-haknya. Hingga kini, belum ada studi yang meneliti mengenai pengetahuan mahasiswa kedokteran di Indonesia terhadap *Differences of Sex Development* (DSD). Dengan mempertimbangkan beberapa dampak yang dapat ditimbulkan dari fenomena di atas, studi ini merupakan sebuah studi yang berupaya untuk mengeksplorasi dan mengidentifikasi mahasiswa Program Studi Pendidikan Dokter di Indonesia terhadap *Differences of Sex Development* (DSD).

1.2 Rumusan Masalah

Bagaimana pengetahuan mahasiswa Program Studi Pendidikan Dokter di Indonesia terhadap *Differences of Sex Development* (DSD)?

1.3 Tujuan Penelitian

1.3.1 Tujuan Umum

Mengidentifikasi pengetahuan mahasiswa Program Studi Pendidikan Dokter di Indonesia terhadap *Differences of Sex Development* (DSD).

1.3.2 Tujuan Khusus

1. Mengetahui profil sosiodemografi mahasiswa Program Studi Pendidikan Dokter di Indonesia dengan pengetahuan mengenai *Differences of Sex Development* (DSD).
2. Mengetahui distribusi frekuensi pengetahuan mahasiswa mengenai *Differences of Sex Development* (DSD) berdasarkan sosiodemografi mahasiswa Program Studi Pendidikan Dokter di Indonesia.

1.4 Manfaat Penelitian

1.4.1 Manfaat Teoritis

1. Hasil penelitian ini diharapkan dapat dijadikan gambaran untuk penelitian lebih lanjut mengenai pengetahuan mahasiswa Program Studi Pendidikan Dokter di Indonesia terhadap *Differences of Sex Development* (DSD).
2. Hasil penelitian ini diharapkan dapat dijadikan landasan serta memberikan sumbangan data dan pemahaman yang dapat digunakan oleh peneliti lain dalam mengembangkan pengetahuan dan memperluas pemahaman tentang *Differences of Sex Development* (DSD).

1.4.2 Manfaat Praktis

Hasil penelitian ini diharapkan dapat membantu mengidentifikasi tingkat pengetahuan mahasiswa Program Studi Pendidikan Dokter di Indonesia mengenai *Differences of Sex Development* (DSD), kekurangan pengetahuan, serta kesenjangan yang perlu diatasi dalam kurikulum pendidikan medis.

1.4.3 Manfaat bagi Pasien

Hasil penelitian ini diharapkan dapat berdampak pada peningkatan kualitas pelayanan kesehatan yang lebih sensitif, terinformasi, dan holistik bagi pasien *Differences of Sex Development* (DSD).

DAFTAR PUSTAKA

1. Felicia M, Suhartono B. 46, XY DSD (Disorder of Sex Development) : Diagnosis dan Tatalaksananya. MK-UKI [Internet]. 2021 Sep. 27 [cited 2023 May.26]; 37(1):26 -35. Available from:
<http://ejournal.uki.ac.id/index.php/mk/article/view/2424>
2. Lee PA, Nordenström A, Houk CP, Ahmed SF, Auchus R, Baratz A, Baratz Dalke K, Liao LM, Lin-Su K, Looijenga LH 3rd, Mazur T, Meyer-Bahlburg HF, Mouriquand P, Quigley CA, Sandberg DE, Vilain E, Witchel S; Global DSD Update Consortium. Global Disorders of Sex Development Update since 2006: Perceptions, Approach and Care. *Horm Res Paediatr.* [Internet] 2016;[cited 2023 Jun 13] 85(3):158-80. Epub 2016 Jan 28. Erratum in: *Horm Res Paediatr.* 2016;85(3):180. Koopman, Peter [added]. Erratum in: *Horm Res Paediatr.* 2016;86(1):70. Available from:
<https://pubmed.ncbi.nlm.nih.gov/26820577/>
3. Purwanti A. "Disorder of Sex Development" : Problem yang Dihadapi Di Indonesia. *Medica Hospitalia J. Clin. Med.* [Internet]. 2017 Sep. 16 [cited 2023 May. 26];4(1). Available from:
<http://medicahospitalia.rskariadi.co.id/medicahospitalia/index.php/mh/article/view/238>
4. National Institute of Health. (2023, May 18). Sex, Gender, and Sexuality. Retrieved June 9, 2023, Available from : <https://www.nih.gov/nih-style-guide/sex-gender-sexuality>
5. Witchel SF. Disorders of sex development. *Best Pract Res Clin Obstet Gynaecol* [Internet]. 2018 Apr; [cited 2023 May 27] 48:90-102. Epub 2017 Nov 22. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5866176/>
6. Maritska Z, Saputro ED, Pangestu R, Faulinza E, Sakinah M, Pranandita F, *et al.* Current status of disorders of sexual development in Indonesia

7. [Internet]. Adv Hum Biol 2022;12:210-3. [cited 2023 May 26] Available from : https://journals.lww.com/adhb/Fulltext/2022/12020/Current_Status_of_Disorders_of_Sexual_Development.20.aspx
8. Berglund A, Johannsen TH, Stochholm K, Viuff MH, Fedder J, Main KM, Gravholt CH. Incidence, Prevalence, Diagnostic Delay, and Clinical Presentation of Female 46,XY Disorders of Sex Development. J Clin Endocrinol Metab [Internet]. 2016 Dec; [cited 2023 May 28]101(12):4532-4540. Available from : <https://scihub.se/10.1210/jc.2016-2248>
9. Mulyani S, Lasmani PS, Saifullah AD, Fawadya A, Iffah A, Pramestya S. The attitudes of nurses in the hospital toward vulnerable people [Internet]. Open Access Maced J Med Sci. 2021;9:57-65.
10. Çetinkaya M, Özen S, Uslu S, Gönç N, Acunas B, Akıncı A, Satar M, Berberoğlu M. Diagnostic and therapeutic approach in newborns with ambiguous genitale with disorder of sex development: consensus report of Turkish Neonatal and Pediatric Endocrinology and Diabetes Societies. Turk Pediatri Ars. [Internet] 2018 Dec 25; [cited 2023 May.30] 53(Suppl 1):S198-S208. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6568300/>
11. Ernst MM, Gardner M, Mara CA, Délot EC, Fechner PY, Fox M, Rutter MM, Speiser PW, Vilain E, Weidler EM, Sandberg DE; The DSD-Translational Research Network Leadership Group and Psychosocial Workgroup. Psychosocial Screening in Disorders/Differences of Sex Development: Psychometric Evaluation of the Psychosocial Assessment Tool. Horm Res Paediatr. [Internet] 2018; [cited 2023 June 9] 90(6):368-380. Available from : https://www.ncbi.nlm.nih.gov/translate.google/pmc/articles/PMC6512800/?_x_tr_sl=en&_x_tr_tl=id&_x_tr_hl=id&_x_tr_pto=tc

12. Bessiène L, Lombès M, Bouvattier C. Controverses et challenges sur le développement sexuel différent (DSD) [Differences of Sex Development (DSD): Controversies and Challenges]. *Ann Endocrinol (Paris)*. [Internet] 2018 Sep; [cited 2023 May 30] 79 Suppl 1:S22-S30. French. Available from : [https://sci-hub.se/10.1016/S0003-4266\(18\)31235-6](https://sci-hub.se/10.1016/S0003-4266(18)31235-6)
13. Ivena S, Jose RL Batubara, Najib A. Profil Klinis dan Terapeutik Anak Hiperplasia Adrenal Kongenital Terkait Gizi Lebih dan Obesitas [Internet]. *Sari Pediatri*, Vol 16, Iss 3, Pp 201-9 (2016) [cited 2023 June 9]. Available from : <https://saripediatri.org/index.php/sari-pediatri/article/view/202>
14. Harmin S, A. A. P, Bambang Tridjaja. Sindrom Klinefelter. *Sari Pediatri*; [Internet] Vol 10, No 6 (2009) [cited 2023 June 9]; 373-7 ; 2338-5030 ; 0854-7823 ; 10.14238/sp10.6.2009. Available from : <https://saripediatri.org/index.php/sari-pediatri/article/view/627>
15. Guerrero-Fernández J, Azcona San Julián C, Barreiro Conde J, Bermúdez de la Vega JA, Carcavilla Urquí A, Castaño González LA, et al. Guía de actuación en las anomalías de la diferenciación sexual (ADS)/desarrollo sexual diferente (DSD). *An Pediatr (Barc)* [Internet]. 2018 [cited 2023 June 10];89:315.e1–315.e19. Available from: <https://analesdepediatria.orgDpdf>
16. Sandberg DE, Gardner M. Differences/Disorders of Sex Development: Medical Conditions at the Intersection of Sex and Gender. *Annu Rev Clin Psychol*[Internet]. 2022 May 9 [cited 2023 June 10];18:201-231. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/-PMC10170864/>
17. Department of Health. Differences of Sex Development: Parent Information [Internet]. Northern Territory Government. 2018 Sept [cited 2023 Jun 11]; Available from : https://nt.gov.au/__data/assets/pdf_file/0010/575344/differences-of-sex-disorder-parent-information.pdf

18. Rohle R, et al. Participation of Adults with Disorder/Differences of Sex Development (DSD) in the Clinical Study DSD-LIFE: Design , methodology, recruitment, data quality, and study population [Internet]. 2017 [cited 2023 Jun 13]; 17(52) Available from : <https://refubium.fu-berlin.de/bitstream/handle/fub188/21478/s12902-017-0198-y.pdf;jsessionid=A9DF26B9F11B6F947195A7D70B56EFD9?sequence=1>
19. Arboleda VA, Sandberg DE, Vilain E. DSDs: genetics, underlying pathologies and psychosexual differentiation. *Nat Rev Endocrinol* [Internet]. 2014 Oct [cited 2023 Jun 13];10(10):603-15. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4441533/>
20. Cools M, Nordenström A, Robeva R, Hall J, Westerveld P, Flück C, Köhler B, Berra M, Springer A, Schweizer K, Pasterski V; COST Action BM1303 working group 1. Caring for individuals with a difference of sex development (DSD): a Consensus Statement. *Nat Rev Endocrinol* [Internet]. 2018 Jul [cited 2023 Jun 14];14(7):415-429. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7136158/>
21. Bertelloni S, Tyutyusheva N, Valiani M, D'Albertyon F, Baldinotti F, Caligo MA, Baroncelli GI, Peroni DG. Disorders/Differences of Sex Development Presenting in the Newborn With 46,XY Karyotype. *Front Pediatr* [Internet]. 2021 Apr 22; [cited 2023 May. 29] 9:627281. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8100517/>
22. Grinspon RP, Catro S, Rey RA. Up-to-Date Clinical and Biochemical Workup of the Child and the Adolescent with a Suspected Disorder of Sex Development [Internet]. 2023 May 23 [cited 2023 Jun 11]; 96(2); 116-127. Available from : <https://karger.com/hrp/article/doi/10.1159/000519895/835114/Up-to-Date-Clinical-and-Biochemical-Workup-of-the>
23. Mehmood KT, Rentea RM. Ambiguous Genitalia and Disorders of Sexual Differentiation. [Updated 2023 Mar 20]. In: StatPearls [Internet]. Treasure

- Island (FL): StatPearls Publishing; 2023 Jan- [cited 2023 Jun 11]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK557435/>
24. Krishnan, S, Wisniewski, AB. 2015. *Ambiguous Genitalia in the Newborn*. Endotext Endocrinology Book.
25. Grinspon RP, Rey RA. When hormone defects cannot explain it: malformative disorders of sex development. *Birth Defects Res C Embryo [Internet] Today*. 2014 Dec [cited 2023 Jun 12];102(4):359-73. Available from : <https://pubmed.ncbi.nlm.nih.gov/25472912/>
26. Amolo P, Laigong P, Omar A, Drop S. Etiology and Clinical Presentation of Disorders of Sex Development in Kenyan Children and Adolescents. *Int J Endocrinol [Internet]*. 2019 Dec 1 [cited 2023 Jun 12];2019:2985347. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6913164/>
27. Krishnan, S. 2015. *Sex Determination and Embryonic Sexual Development*. Concepts in Biology.
28. Hewitt J, Zacharin M. Hormone replacement in disorders of sex development: Current thinking. *Best Pract Res Clin Endocrinol Metab [Internet]*. 2015 Jun;29(3) [cited 2023 Jun 13]:437-47. Available from : <https://pubmed.ncbi.nlm.nih.gov/26051301/>
29. Brain CE, Creighton SM, Mushtaq I, Carmichael PA, Barnicoat A, Honour JW, Larcher V, Achermann JC. Holistic management of DSD [Internet]. *Best Pract Res Clin Endocrinol Metab*. 2010 Apr [cited 2023 Jun 14];24(2):335-54. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2892742/>
30. El-Sherbiny M. Disorders of sexual differentiation: II. Diagnosis and treatment [Internet]. *Arab J Urol*. 2013 Mar [cited 2023 Jun 15];11(1):27-32. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4442922/>

31. Chavhan GB, Parra DA, Oudjhane K, Miller SF, Babyn PS, Pippi Salle FL. Imaging of ambiguous genitalia: classification and diagnostic approach [Internet]. *Radiographics*. 2008 Nov-Dec [cited 2023 Jun 15];28(7):1891-904. Available from :
<https://pubmed.ncbi.nlm.nih.gov/19001646/>
32. Wechsung K, Marshall L, Jürgensen M, Neumann U, On Behalf Of The Empower-Dsd Study Group. Diagnosis of DSD in Children-Development of New Tools for a Structured Diagnostic and Information Management Program within the Empower-DSD Study [Internet]. *J Clin Med*. 2022 Jul 3 [cited 2023 Jun 15];11(13):3859. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9267843/>
33. Kohva E, Miettinen PJ, Taskinen S, Hero M, Tarkkanen A, Raivio T. Disorders of sex development: timing of diagnosis and management in a single large tertiary center [Internet]. *Endocr Connect*. 2018 Apr [cited 2023 Jun 16];7(4):595-603. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5911703/>
34. Khanna K, Sharma S, Gupta DK. A Clinical Approach to Diagnosis of Ambiguous Genitalia [Internet]. *J Indian Assoc Pediatr Surg*. 2019 Jul-Sep [cited 2023 June 9];24(3):162-169. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6568146/>
35. Al Jurayyan NA. Disorders of sex development: diagnostic approaches and management options-an islamic perspective [Internet]. *Malays J Med Sci*. 2011 Jul [cited 2023 June 16];18(3):4-12. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3216232/>
36. Jürgensen M, Rapp M, Döhnert U, Frielitz FS, Ahmed F, Cools M, Thyen U, Hiort O. Assessing the health-related management of people with differences of sex development [Internet]. *Endocrine*. 2021 Mar [cited 2023 June 17];71(3):675-680. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8016813/>

37. Moshiri M, Chapman T, Fechner PY, Dubinsky TJ, Shnorhavorian M, Osman S, Bhargava P, Katz DS. Evaluation and management of disorders of sex development: multidisciplinary approach to a complex diagnosis [Internet]. *Radiographics*. 2012 Oct [cited 2023 June 17];32(6):1599-618. Available from : <https://pubmed.ncbi.nlm.nih.gov/23065160/>
38. Wisniewski AB, Batista RL, Costa EMF, Finlayson C, Sircili MHP, Dénes FT, Domenice S, Mendonca BB. Management of 46,XY Differences/Disorders of Sex Development (DSD) Throughout Life [Internet]. *Endocr Rev*. 2019 Dec 1 [cited 2023 June 17];40(6):1547-1572. Available from : <https://pubmed.ncbi.nlm.nih.gov/31365064/>
39. Falhammar H, Claahsen-van der Grinten H, Reisch N, Slowikowska-Hilczer J, Nordenström A, Roehle R, Bouvattier C, Kreukels BPC, Köhler B; dsd-LIFE group. Health status in 1040 adults with disorders of sex development (DSD): a European multicenter study [Internet]. *Endocr Connect*. 2018 Mar [cited 2023 June 18];7(3):466-478. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5861372/>
40. Ernst MM, Chen D, Kennedy K, Jewell T, Sajwani A, Foley C, Sandberg DE; DSD-TRN Psychosocial Workgroup and Accord Alliance. Disorders of sex development (DSD) web-based information: quality survey of DSD team websites [Internet]. *Int J Pediatr Endocrinol*. 2019;2019:1. Available from : <https://pubmed.ncbi.nlm.nih.gov/31149017/>
41. Shoureshi PS, Rajasegaran A, Kokorowski P, Sparks SS, Seideman CA. Social media engagement, perpetuating selected information, and accuracy regarding CA SB-201: Treatment or intervention on the sex characteristics of a minor [Internet]. *J Pediatr Urol*. 2021 Jun [cited 2023 June 19];17(3):372-377. Available from : <https://pubmed.ncbi.nlm.nih.gov/33663998/>
42. Pasterski V, Mastroyannopoulou K, Wright D, Zucker KJ, Hughes IA. Predictors of posttraumatic stress in parents of children diagnosed with a

- disorder of sex development [Internet]. *Arch Sex Behav*. 2014 Feb [cited 2023 June 19];43(2):369-75. Available from : <https://pubmed.ncbi.nlm.nih.gov/24085468/>
43. Thyen U, Ittermann T, Flessa S, Muehlan H, Birnbaum W, Rapp M, Marshall L, Szarras-Capnik M, Bouvattier C, Kreukels BPC, Nordenstroem A, Roehle R, Koehler B; dsd-LIFE group. Quality of health care in adolescents and adults with disorders/differences of sex development (DSD) in six European countries (dsd-LIFE) [Internet]. *BMC Health Serv Res*. 2018 Jul 5 [cited 2023 June 19];18(1):527. Available from : <https://pubmed.ncbi.nlm.nih.gov/29976186/>
 44. Danandjaya K. Perilaku Individu Dalam Organisasi. *Jurnal Literasi Pendidikan Nusantara*. 2020 Dec;1(2):125-132.
 45. Dr. Irwan S.KM MK. Irwan-Buku-Etika-dan-Perilaku-Kesehatan. *Etika Dan Perilaku Kesehatan*. 2017;105–6.
 46. Swandayani YM, Cayami FK, Winarni TI, Utari A. Familiarity and genetic literacy among medical students in Indonesia. *BMC Med Educ* [Internet]. 2021 Dec 1 [cited 2023 Jun 20];21(1):1–10. Available from: <https://bmcmmededuc.biomedcentral.com/articles/10.1186/s12909-021-02946-8>
 47. Desmaryani S, Nur F, Herlina, Islakhiyah, Dewi R. Knowledge, Parent's Attitude and Behavior toward Development of Adolescent Behavior in the Digital Era [Internet]. *Saudi Journal of Business and Management Studies*. 2019 [cited 2023 Jun 20]. Available from: https://www.researchgate.net/publication/344429357_Knowledge_Parent%27s_Attitude_and_Behavior_toward_Development_of_Adolescent_Behavior_in_the_Digital_Era
 48. Kaphingst KA, Blanchard M, Milam L, Pokharel M, Elrick A, Goodman MS. Relationships Between Health Literacy and Genomics-Related Knowledge, Self-Efficacy, Perceived Importance, and Communication in a Medically Underserved Population. *J Health Commun*. 2016;21 Suppl

- 1(Suppl 1):58-68. Available from : https://www-ncbi-nlm-nih.gov.translate.googleusercontent.com/translate?_x_tr_sl=en&_x_tr_tl=id&_x_tr_hl=id&_x_tr_pto=tc
49. Bradbury A. Mental Health Stigma: The Impact of Age and Gender on Attitudes. *Community Ment Health J* [Internet]. 2020 Jul 1 [cited 2023 Jun 21];56(5):933–8. Available from: <https://pubmed.ncbi.nlm.nih.gov/32002711/>
50. Rujito L. Genetic Literacy Levels And Genetic Screening Attitudes On Medical Students In Indonesia: A National Survey [Internet]. 2020 [cited 2023 Jun 21]. Available from: <https://mjphm.org/index.php/mjphm/article/view/407/192>
51. Wang Z, Xu X, Han Q, Chen Y, Jiang J, Ni GX. Factors associated with public attitudes towards persons with disabilities: a systematic review. *BMC Public Health* [Internet]. 2021 Dec 1 [cited 2023 Jun 21];21(1). Available from: [/pmc/articles/PMC8173851/](https://pubmed.ncbi.nlm.nih.gov/32002711/)
52. van 't Noordende AT, Lisam S, Singh V, Sadiq A, Agarwal A, Hinders DC, et al. Changing perception and improving knowledge of leprosy: An intervention study in uttar pradesh, india. *PLoS Negl Trop Dis* [Internet]. 2021[cited 2023 Jun 21];15(8):1–19. Available from: <http://dx.doi.org/10.1371/journal.pntd.0009654>
53. Fang Q, Zhang TM, Wong YLI, Yau YY, Li XH, Li J, et al. The mediating role of knowledge on the contact and stigma of mental illness in Hong Kong. *Int J Soc Psychiatry* [Internet]. 2021 Nov 1 [cited 2023 Jun 21];67(7):935–45. Available from: <https://pubmed.ncbi.nlm.nih.gov/33231134/>
54. Rincón Uribe FA, Godinho RC de S, Machado MAS, Oliveira KR da SG, Neira Espejo CA, de Sousa NCV, et al. Health knowledge, health behaviors and attitudes during pandemic emergencies: A systematic review. *PLoS One* [Internet]. 2021 [cited 2023 Jun 21];16(9):e0256731.

Available from:

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0256731>

55. Sugiyono, *Statistika Untuk Penelitian*, Bandung: Alfabeta, 2003;267 -
56. Juliandi Azuar, *Teknik Pengujian Validitas dan Reliabilitas*, dikutip dari http://www.contohskripsitesis.com/backu p/Panduan/SPSS_3.pdf, 2007 [cited 2023 Jun 21];12
57. Notoatmodjo, *Metodologi Penelitian Kesehatan*, Jakarta: Rineka Cipta, 2005;116,129,130,133
58. PB Triton, *SPSS 13.0 Terapan. Riset Statistik Parametrik*, Jogjakarta : Andi Ofset, 2005;256
59. Momanyi J, Too J, Simiyu C. Effect of Students' Age on Academic Motivation and Academic Performance among High School Students in Kenya | Semantic Scholar [Internet]. 2015 [cited 2023 Sept 19]. Available from: <https://www.semanticscholar.org/paper/Effect-of-Students%27-Age-on-Academic-Motivation-and-MomanyiToo/af57089b7b1cbca58326eaacd4dbb80cf647cd08>
60. Ashida S, Goodman M, Pandya C, Koehly LM, Lachance C, Stafford J, Kaphingst KA. Age differences in genetic knowledge, health literacy and causal beliefs for health conditions [Internet]. *Public Health Genomics*. 2011; [cited 2023 Sept 19]14(4-5):307-16. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136390/>
61. Komasa N, Terasaki F, Takitani K, Lee SW, Kawata R, Nakano T. Comparison of Younger and Older medical student performance outcomes: A retrospective analysis in Japan. *Medicine (Baltimore)* [Internet]. 2022 Nov 11; [cited 2023 Sept 20] 101(45):e31392. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9666208/>
62. Champion M, Goldgar C, Hopkin RJ, Praws CA, Dasgupta S. Genomic Education for The Next Generation of Health Care Providers [Internet]. 2019 Nov; [cited 2023 Sept 20] 21 (11): 2422-2430. Available from : <https://www-sciencedirect->

- com.translate.google/science/article/pii/S1098360021010728?_x_tr_sl=en&_x_tr_tl=id&_x_tr_hl=id&_x_tr_pto=tc
63. Rujito L, Nandhika T, Lestari DW, Ferine M, Muhaimin A. Genetic Literacy Levels and Genetic Screening Attitudes on Medical Students in Indonesia: A National Survey [Internet]. 2020 Dec 31 [cited 2023 Sept 21] 20 (3); 1-8. Available from :
<https://mjphm.org/index.php/mjphm/article/view/407>
 64. Haist SA, Wilson JF, Elam CL, Blue AV, Fosson SE. The Effect of Gender and Age on Medical School Performance: An Important Interaction [Internet]. *Adv Health Sci Educ Theory Pract*. 2000; [cited 2023 Sept 22] 5(3):197-205. Available from :
<https://pubmed.ncbi.nlm.nih.gov/12386462/>
 65. Mandal A, Ghosh A, Sengupta G, Bera T, Das N, Mukherjee S. Factors affecting the performance of undergraduate medical students: a perspective [Internet]. *Indian J Community Med*. 2012 Apr; [cited 2023 Sept 22] 37(2):126-9. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3361796/>
 66. Adli I, Widyahening IS, Lazarus G, Phowira J, Baihaqi LA, Ariffandi B, et al. Knowledge, attitude, and practice related to the COVID-19 pandemic among undergraduate medical students in Indonesia: A nationwide cross-sectional study. *PLoS One* [Internet]. 2022 Jan 1 [cited 2022 Oct 19];17(1):e0262827. Available from:
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0262827>
 67. Ambroise Wonkam, Alfred K. Njamnshi, Fru F. Angwafo. Knowledge and attitudes concerning medical genetics amongst physicians and medical students in Cameroon (sub-Saharan Africa) [Internet]. *Genetics in Medicine*. 2006 June [cited 2023 Sept 23]; 8(6):331-338. Available from :
<https://www.sciencedirect.com/science/article/pii/S1098360021032330>
 68. Kemal RA, Zulharman, Firdaus, Pratama BF. Pre-testing of Genetic Literacy Questionnaire Reveals Genetics Misconceptions Among Medical Students of Universitas Riau. *nuscientech* [Internet]. 2022 Dec 9

- [cited 2023Sep.23]:58-62. Available from:
<https://nstproceeding.com/index.php/nuscientech/article/view/825>
69. Alotaibi AA, Cordero MAW. Assessing Medical Students' Knowledge of Genetics: Basis for Improving Genetics Curriculum for Future Clinical Practice [Internet]. *Adv Med Educ Pract.* 2021 Dec 30; [cited 2023 Sept 18] 12:1521-1530. Available from :
<https://www.dovepress.com/assessing-medical-students-knowledge-of-genetics-basis-for-improving-g-peer-reviewed-fulltext-article-AMEP>
70. Rubanovich CK, Cheung C, Mandel J, Bloss CS. Physician preparedness for big genomic data: a review of genomic medicine education initiatives in the United States [Internet]. *Hum Mol Genet.* 2018 Aug 1 [cited 2023 Sept 24] ; 27(R2):R250-R258. Available from :
<https://pubmed.ncbi.nlm.nih.gov/29750248/>
71. Imwattana K, Kiratisin P, Techasintana P and Ngamskulrungrroj P. An impact on medical student knowledge outcomes after replacing peer lectures with small group discussions [Internet]. *MedEdPublish* 2019 May 21 [cited 2023 Sept 25]; 7:224. Available from :
<https://mededpublish.org/articles/7-224>
72. Hayat AA, Salehi A, Kojuri J. Medical student's academic performance: The role of academic emotions and motivation [Internet]. *J Adv Med Educ Prof.* 2018 Oct [cited 2023 Sept 25];6(4):168-175. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6191829/>
73. King A. M., Mayer C., Barrie M., Greenberger S., *et al.* (2018) Replacing Lectures with Small Groups: The Impact of Flipping the Residency Conference Day [Internet]. *West J Emerg Med.* 2018 Jan [cited 2023 Sept 27]; 19(1): 11–17. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5785176/>
74. Adel M. Aboregela, Hany M.A. Sonpol, Ashraf S. Metwally, Ayman M. El-Ashkar, Abdullah A. Hashish, Osama A. Mohammed, Tarek A. Elnahriry, Ahmed Senbel, Mushabab Alghamdi. Medical students' perception and academic performance after team-based and seminar-based

- learning in human anatomy [Internet]. *Journal of Taibah University Medical Sciences*. 2023 Feb [cited 2023 Sept 28]; 18(1): 65-73. Available from :
<https://www.sciencedirect.com/science/article/pii/S165836122200155X>
75. Morgenthau A, Margus C, Mackley MP, Miller AP. Rare Disease Education Outside of the Classroom and Clinic: Evaluation of the RARE Compassion Program for Undergraduate Medical Students [Internet]. *Genes*. 2022 [cited 2023 Nov 6]; 13(10):1707. Available from :
<https://www.mdpi.com/2073-4425/13/10/1707>
76. Hendajany N. The Effectiveness Of Public Vs Private Schools In Indonesia [Internet]. *J Indones Appl Econ*. 2016 Feb 1 [cited 2023 Sept 29];6(1):66–89. Available from :
https://www.researchgate.net/publication/311957284_The_Effectiveness_Of_Public_Vs_Private_Schools_In_Indonesia
77. Welch AR. Blurred vision?: Public and private higher education in Indonesia [Internet]. *High Educ*. 2007 [cited 2023 Sept 29] ;54(5):665–87. Available from : <https://link.springer.com/article/10.1007/s10734-006-9017-5>
78. Mustika, Rita & Nishigori, Hiroshi & Ronokusumo, Sjamsuhidajat & Scherpbier, Albert. The Odyssey of Medical Education in Indonesia [Internet]. *The Asia Pacific Scholar*. 2019 Jan 22 [cited 2023 Sept 30]; 4(1): 4-8. Available from : <https://medicine.nus.edu.sg/taps/issues/the-odyssey-of-medical-education-in-indonesia/>
79. Ashrof Bin Zainuddin H, Subri F. The School Facilities towards the Improvement of Students' Academic Achievement: Case Study-Secondary Schools in Klang. *J Mod Educ Rev* [Internet]. 2017 [cited 2023 Sept 30];7(9):647–53. Available from: <http://www.academicstar.us>
80. Blouin D, Tekian A, Kamin C, Harris IB. The impact of accreditation on medical schools' processes [Internet]. *Med Educ*. 2018 Feb [cited 2023 Sept 30];52(2):182-191. Available from :
<https://pubmed.ncbi.nlm.nih.gov/29044652/>

81. Abdalla, Mohamed Elhassan. Accreditation in Medical Education [Internet]. Concepts and Practice. 2012 Jan 1 [cited 2023 Sept 30] Available from :
https://www.researchgate.net/publication/235914081_Accreditation_in_Medical_Education_Concepts_and_Practice/citation/download
82. Kafaji M. The perceived benefits of accreditation on students' performance: The case of private business schools [Internet]. Ind High Educ. 2020 Dec 1 [cited 2023 Oct 1];34(6):421– 8. Available from :
https://www.researchgate.net/publication/339040654_The_perceived_benefits_of_accreditation_on_students%27_performance_The_case_of_private_business_schools
83. Badan Akreditasi Nasional Perguruan Tinggi. Peraturan Badan Akreditasi Nasional Perguruan Tinggi Nomor 4 Tahun 2017. 2017;
84. Ikatan Senat Mahasiswa Kedokteran Indonesia. Sejarah – ISMKI [Internet]. 2022. [cited 2023 Oct 2]. Available from:
<https://ismki.or.id/sejarah/>
85. Kadir NA, Schütze H, Weston KM. Educating Medical Students for Practice in a Changing Landscape: An Analysis of Public Health Topics within Current Indonesian Medical Programs [Internet]. Int J Environ Res Public Health. 2021 Nov 1 [cited 2023 Oct 2];18(21). Available from:
[/pmc/articles/PMC8582891/](https://pmc/articles/PMC8582891/)
86. Van der Merwe LJ, Nel G, Williams C, Erasmus S, Nel R, Kolver M, Van den Heever B, Joubert G. The knowledge, attitudes and practices regarding family history of hereditary diseases amongst undergraduate students at the University of the Free State [Internet]. S Afr Fam Pract. 2022 Jan 27 [cited 2023 Oct 3];64(1):e1-e8. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8844543/>
87. A, Syed & Alghamdi, YaraAbdulaziz & Alghamdi, AmalAbdullah & Khan, Anwar. Knowledge, awareness, and attitude of medical students concerning genetics and premarital screening [Internet]. Journal of Nature and Science of Medicine. 2021 [cited 2023 Oct 4]; 4. 356. Available from

- :
- https://www.researchgate.net/publication/355148244_Knowledge_awareness_and_attitude_of_medical_students_concerning_genetics_and_prenatal_screening
88. Mukherjee, Samiran & Thawani, Rajat & Roy, Priyamvada & Aggarwal, Amitesh & Das, Shukla & Goel, Ashish. Interaction with Patients in Understanding Medical Students' Role as Health Care Providers [Internet]. Journal of Pharmaceutical and Biomedical Sciences. 2017 [cited 2023 Oct 4]; 07. 40-45. 10.20936/JPBMS/170205.
 89. Yadav P. Interaction with Patients as a Budding Doctor: An Experience [Internet]. JNMA J Nepal Med Assoc. 2022 Aug 1 [cited 2023 Oct 5];60(252):753-755. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9446499/>
 90. Nadolski, G.J., Bell, M.A., Brewer, B.B. et al. Evaluating the quality of interaction between medical students and nurses in a large teaching hospital [Internet]. BMC Med Educ. 2006 April 23 [cited 2023 Oct 6]; 6(23). Available from : <https://bmcmmededuc.biomedcentral.com/articles/10.1186/1472-6920-6-23>
 91. Putri SN, Maritska Z, Suryani P. Pengetahuan dan Sikap Mahasiswa Program Studi Pendidikan Dokter di Indonesia Terhadap Sindrom Down [Internet]. Undergraduate Thesis. Sriwijaya University. 2022 Nov 29 [cited 2023 Nov 4] Available from : <https://repository.unsri.ac.id/82921/>
 92. Eroğlu Filibeli B, Havare N, Erbak Yılmaz H, Yıldırım JG, Çatlı G, Dündar BN. Evaluation of Turner Syndrome Knowledge among Physicians and Parents. J Clin Res Pediatr Endocrinol [Internet]. 2020 Mar 19 [cited 2023 Oct 7];12(1):95-103. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7127883/>
 93. Gupta A, Lockeman K, Edwards C. Increasing Knowledge and Self-Efficacy on Differences in Sex Development (DSD): A Team-Based Learning Activity for Pediatric Residents [Internet]. MedEdPORTAL.

- 2021 Feb 23 [cited 2023 Oct 8];17:11105. Available from :
https://www.mededportal.org/doi/10.15766/mep_2374-8265.11105
94. Maroof KA, Parashar P, Bansal R. How are our medical students using the computer and internet? A study from a medical college of north India [Internet]. Niger Med J. 2012 Apr [cited 2023 Nov 2] ;53(2):89-93. Available from :<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3530255/>
95. Clune-Taylor, Catherine. From Intersex to DSD: the Disciplining of Sex Development [Internet]. PhaenEx. 2010 [cited 2023 Oct 8]; 5. Available from :
https://www.researchgate.net/publication/265101634_From_Intersex_to_DSD_the_Disciplining_of_Sex_Development
96. Ariani Y, Soeharso P, Sjarif DR. Genetics and genomic medicine in Indonesia. Mol Genet Genomic Med [Internet]. 2017 Mar 1 [cited 2023 Oct 9];5(2):103–9. Available from: <https://onlinelibrary.wiley.com/doi/full/10.1002/mgg3.284>
97. Walia R, Singla M, Vaiphei K, Kumar S, Bhansali A. Disorders of sex development: a study of 194 cases [Internet]. Endocr Connect. 2018 Feb [cited 2023 Oct 9];7(2):364-371. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5825923/>
98. Alkhzouz C, Bucerzan S, Miclaus M, Mirea AM, Miclea D. 46,XX DSD: Developmental, Clinical and Genetic Aspects. Diagnostics (Basel) [Internet]. 2021 Jul 30 [cited 2023 Oct 10];11(8):1379. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8392837/>
99. Markosyan R. Patients with disorders of sex development. Ann Pediatr Endocrinol Metab [Internet]. 2021 Jun [cited 2023 Oct 11];26(2):74-79. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8255866/>
100. Gardner M, Sandberg DE. Navigating Surgical Decision Making in Disorders of Sex Development (DSD) [Internet]. Front Pediatr. 2018 Nov 19 [cited 2023 Oct 12];6:339. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6252317/>

101. Birnbaum W, Bertelloni S. Sex hormone replacement in disorders of sex development [Internet]. *Endocr Dev*. 2014 [cited 2023 Oct 12];27:149-59. Available from : <https://pubmed.ncbi.nlm.nih.gov/25247652/>
102. Kumar J, Kumar V, Bhatia V, Dabadghao P, Chaturvedi S, Kapoor R, Ansari MS. Managing disorder of sexual development surgically: A single center experience [Internet]. *Indian J Urol*. 2012 Jul [cited 2023 Oct 12];28(3):286-91. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3507397/>
103. Nowotny HF, Reisch N. Challenges Waiting for an Adult with DSD [Internet]. *Horm Res Paediatr*. 2023 [cited 2023 Oct 13];96(2):207-221. Available from : <https://pubmed.ncbi.nlm.nih.gov/36473446/>
104. Mediå LM, Sigurdardottir S, Fauske L, Waehre A. Understanding sexual health concerns among adolescents and young adults with differences of sex development: a qualitative study [Internet]. *Int J Qual Stud Health Well-being*. 2023 Dec [cited 2023 Oct 13];18(1):2204635. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10128427/>
105. Flewelling KD, De Jesus Ayala S, Chan YM, Chen D, Daswani S, Hansen-Moore J, Rama Jayanthi V, Kapa HM, Nahata L, Papadakis JL, Pratt K, Rausch JR, Umbaugh H, Vemulakonda V, Crerand CE, Tishelman AC, Buchanan CL. Surgical experiences in adolescents and young adults with differences of sex development: A qualitative examination [Internet]. *J Pediatr Urol*. 2022 Jun [cited 2023 Oct 15];18(3):353.e1-353.e10. Available from : <https://pubmed.ncbi.nlm.nih.gov/35341672/>
106. Jahagirdar R, Khadilkar V, Deshpande R, Lohiya N. Clinical, Etiological and Laboratory Profile of Children with Disorders of Sexual Development (DSD)-Experience from a Tertiary Pediatric Endocrine Unit in Western India [Internet]. *Indian J Endocrinol Metab*. 2021 Jan-Feb

- [cited 2023 Oct 15];25(1):48-53. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8323624/>
107. Canlas JF, Ponmani C. Congenital adrenal hyperplasia with salt-wasting crisis and arrhythmia: a case study [Internet]. *BMJ Case Rep*. 2019 Jan 29 [cited 2023 Oct 15];12(1):e227565. Available from :
<https://pubmed.ncbi.nlm.nih.gov/30700462/>
108. Kihumuro RB, Kaggwa MM, Kintu TM, Nakandi RM, Muwanga DR, Muganzi DJ, Atwau P, Ayesiga I, Najjuma JN, Ashaba S. Knowledge, attitude and perceptions of medical students towards mental health in a university in Uganda [Internet]. *BMC Med Educ*. 2022 Oct 20 [cited 2023 Nov 1];22(1):730. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9584261/>
109. Dessens A, Guaragna-Filho G, Kyriakou A, Bryce J, Sanders C, Nordenskjöld A, Rozas M, Iotova V, Ediati A, Juul A, Krawczynski M, Hiort O, Faisal Ahmed S. Understanding the needs of professionals who provide psychosocial care for children and adults with disorders of sex development [Internet]. *BMJ Paediatr Open*. 2017 Aug 31 [cited 2023 Oct 16];1(1):e000132. Available from :
<https://pubmed.ncbi.nlm.nih.gov/29637150/>
110. Waehre A, Heggeli C, Hald K, Myhre AG, Diseth T. A 15-20-year follow-up of mental health, psychosocial functioning and quality of life in a single center sample of individuals with differences in sex development [Internet]. *Health Psychol Behav Med*. 2022 Sep 6 [cited 2023 Oct 17];10(1):837-854. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9467622/>
111. Cai J, Zhu G, Tian H, Yuan J, Gao H, Sun L, Dong G, Ru W, Wu D, Tang D, Gao W, Fu J, Yang R. Mental health status of children with disorders of sexual development and their correlates [Internet]. *Front Public Health*. 2022 Jul 27 [cited 2023 Oct 17];10:756382. Available from :
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9363791/#:~:text=Childre>

n%20with%20DSD%20have%20obvious,anxiety%2Drelated%20emotion
al%20disorders%20early.

112. Ediati A, Juniarto AZ, Birnie E, Okkerse J, Wisniewski A, Drop S, Faradz SMH, Dessens A. Social stigmatisation in late identified patients with disorders of sex development in Indonesia. *BMJ Paediatr Open* [Internet]. 2017 Oct 30 [cited 2023 Oct 18];1(1):e000130. Available from : <https://pubmed.ncbi.nlm.nih.gov/29637149/>
113. Laurino MY, Sternen DL, Thompson JK, Leppig KA. Identifying opportunities for collaboration and growth of genetic counseling services in the Asia Region. *J Community Genet* 2017 83 [Internet]. 2017 May 25 [cited 2022 Oct 19];8(3):243–8. Available from: <https://link.springer.com/article/10.1007/s12687-017-0307-7>
114. Traino KA, Baudino MN, Kraft JD, Basile NL, Dattilo TM, Davis MP, Buchanan C, Cheng EY, Poppas DP, Wisniewski AB, Mullins LL. Factor Analysis of the Stigma Scale-Parent Version in Pediatric Disorders/Differences of Sex Development. *Stigma Health* [Internet]. 2021 Nov [cited 2023 Oct 19];6(4):390-396. Available from : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9053364/>