SKIN-TO-SKIN CARE GARMENT

A convertible garment for skin-to-skin care of an infant, the garment including a flexible panel having a panel width disposed between panel first and second ends which removably couple to one another to dispose the panel width about a torso of a wearer to define an interior space between a panel internal surface and a front torso portion of the wearer, whereby the interior space can be configured to receive an infant; a first support element coupled to the panel proximate a panel first side top portion; and a second support element coupled to the panel proximate a panel second side top portion; whereby the first and second support elements can be configured to couple to one another to support the panel about the torso of the wearer.
SKIN-TO-SKIN CARE GARMENT


BACKGROUND OF THE INVENTION

[0002] There is a growing body of evidence demonstrating that skin-to-skin contact, also known as “kangaroo care,” practiced immediately after birth and beyond, may offer multiple medical benefits for both the care provider and the baby. Skin-to-skin contact is a holding technique where the care provider positions a baby, wearing only a diaper, against their bare chest. Full chest-to-chest contact between the care provider and the baby may stimulate a hormonal cascade resulting in the production of oxytocin within the brain of the baby. Oxytocin is a neuromodulator which may provide a sense of calm, happiness, and contentment by inhibiting the release of one or more stress response hormones, thereby prohibiting an increase in heart rate, breathing rate, blood pressure, and growth or recovery delays in the baby. Simply stated, skin-to-skin contact can minimize stress responses in the baby.

[0003] Additional advantages of skin-to-skin contact for the baby may include: accelerated brain development, synchronization of heart rate and breathing, regulation of body temperature, increased oxygenation, enhanced quality of sleep, increased immunity, improved digestion, amplified weight gain, greater calmness, diminished crying, or the like, or combinations thereof.

[0004] There may be advantages for the mother from skin-to-skin contact as well, often reducing the occurrence of postpartum depression and increasing the mother’s breast milk supply, subsequently resulting in a higher rate of success with breastfeeding. In addition to the positive physiological effects, skin-to-skin contact may aid in creating an important bond between the care provider and the baby.

[0005] Recent studies report long-term positive effects of skin-to-skin contact for the infant, including a greater head circumference and significant improvement in motor and cognitive development at one year of age. Heightened parent sensitivity and infant interaction through six months of age was also observed.

[0006] Accordingly, skin-to-skin contact may be promoted in an Operating Room (OR), for example after an infant is delivered via a Cesarean section (C-section) procedure, or in a neonatal intensive care unit (NICU). However, there may be perceived barriers to the implementation of skin-to-skin contact, including a lack of protocols or guidelines for safe implementation that allows for a comfortable and private experience for the provider and the infant.

[0007] Thus, there exists a need for a garment which safely and conveniently facilitates skin-to-skin contact, especially for use in an OR or NICU.

SUMMARY OF THE INVENTION

[0008] A broad object of the invention can be to provide a convertible garment for skin-to-skin care of an infant, the garment including a flexible panel having a panel width disposed between panel first and second ends which removably couple to one another to dispose the panel width about a torso of a wearer to define an interior space between a panel internal surface and a front torso portion of the wearer, whereby the interior space can be configured to receive an infant; a first support element coupled to the panel proximate a panel first side top portion; and a second support element coupled to the panel proximate a panel second side top portion; whereby the first and second support elements can be configured to couple to one another to support the panel about the torso of the wearer.

[0009] Another broad object of the invention can be to provide a method of making a convertible garment for skin-to-skin care of an infant, the method including providing a flexible panel having a panel width disposed between panel first and second ends which removably couple to one another to dispose the panel width about a torso of a wearer to define an interior space between a panel internal surface and a front torso portion of the wearer, whereby the interior space can be configured to receive an infant; coupling a first support element to the panel proximate a panel first side top portion; and a second support element to the panel proximate a panel second side top portion; whereby the first and second support elements can be configured to couple to one another to support the panel about the torso of the wearer.

[0010] Another broad object of the invention can be to provide a method of using a convertible garment for skin-to-skin care of an infant, the method including obtaining the garment comprising a flexible panel having a panel width disposed between panel first and second ends, a first support element coupled to the panel proximate a panel first side top portion, and a second support element coupled to the panel proximate a panel second side top portion; removably coupling the panel first and second ends to one another to dispose the panel width about a torso of a wearer to define an interior space between a panel internal surface and a front torso portion of the wearer, the interior space configured to receive an infant; and coupling the first and second support elements to one another to support the panel about the torso of the wearer.

[0011] Naturally, further objects of the invention are disclosed throughout other areas of the specification, drawings, and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1A is a front view illustration of a method of using a particular embodiment of the convertible garment worn in a garment first configuration.

[0013] FIG. 1B is a front view illustration of a method of using a particular embodiment of the convertible garment worn in a garment first configuration.

[0014] FIG. 1C is a side view illustration of a method of using a particular embodiment of the convertible garment worn in a garment first configuration.

[0015] FIG. 2 is a front view of a particular embodiment of the convertible garment in a garment first configuration.

[0016] FIG. 3 is a back view of a particular embodiment of the convertible garment in a garment first configuration.

[0017] FIG. 4 is a first side view of a particular embodiment of the convertible garment in a garment first configuration.

[0018] FIG. 5 is a second side view of a particular embodiment of the convertible garment in a garment first configuration.

[0019] FIG. 6 is a top view of a particular embodiment of the convertible garment in a garment first configuration.

[0020] FIG. 7 is a bottom view of a particular embodiment of the convertible garment in a garment first configuration.
FIG. 8A is a front view illustration of a method of using a particular embodiment of the convertible garment worn in a garment second configuration.

FIG. 8B is a side view illustration of a method of using a particular embodiment of the convertible garment worn in a garment second configuration.

FIG. 9 is a front view of a particular embodiment of the convertible garment in a garment second configuration.

FIG. 10 is a back view of a particular embodiment of the convertible garment in a garment second configuration.

FIG. 11 is a first side view of a particular embodiment of the convertible garment in a garment second configuration.

FIG. 12 is a second side view of a particular embodiment of the convertible garment in a garment second configuration.

FIG. 13 is a top view of a particular embodiment of the convertible garment in a garment second configuration.

FIG. 14 is a bottom view of a particular embodiment of the convertible garment in a garment second configuration.

FIG. 15 is an unfurled front view of a particular embodiment of the convertible garment.

FIG. 16 is an unfurled back view of a particular embodiment of the convertible garment.

DETAILED DESCRIPTION OF THE INVENTION

Now referring primarily to FIG. 1A, FIG. 1B, FIG. 1C, FIG. 8A, and FIG. 8B, which illustrate methods of using a particular embodiment of the convertible garment (1) for skin-to-skin contact between a wearer (2) and an infant (3). The wearer (2) can wear the garment (1) about a torso (4), the garment (1) including (i) a flexible panel (5) having a panel width (6) configured to dispose about the torso (4) of the wearer (2) to define an interior space (7) between a panel internal surface (8) and a front torso portion (9) of the wearer (2) and (ii) a pair of first and second support elements (10)(11) each coupled to the panel (5) to proximate corresponding panel first and second side top portions (12)(13), the pair of first and second support elements (10)(11) configured to couple to one another to support the panel (5) about the torso (4) of the wearer (2). Additionally, the wearer (2) of the garment (1) can insert an infant (3) into the interior space (7) to engage the infant (3) with the front torso portion (9) of the wearer (2) for skin-to-skin care of the infant (3).

As used herein, the term "torso" means the trunk of a human body, the trunk excluding the head, neck, and limbs. The torso (4) can be divided into a front torso portion (9) and a back torso portion, the front torso portion (9) encompassing the anterior portion of the trunk of the human body, including the chest and the abdomen, the back torso portion encompassing the posterior portion of the trunk of the human body, including the back. Additionally, the torso (4) can be divided into an upper torso portion (14) and a lower torso portion (15), the upper torso portion (14) extending from about the bustline upward and the lower torso portion (15) extending from about the bustline downward.

As used herein, the term "infant" means a preterm neonate, a term neonate, or any animal having dimensions similar to a neonate.

Now referring primarily to FIG. 1A through FIG. 7, the wearer (2) can wear the garment (1) in a garment first configuration (16), whereby the first and second support elements (10)(11) couple to one another about a neck (17) of the wearer (2). In the garment first configuration (16), the infant (3) can be received within the interior space (7) to dispose the infant (3) in a generally vertical position (18) in relation to the front torso portion (9) of the wearer (2) for skin-to-skin care of the infant (3). As an illustrative example, the garment first configuration (16) may be useful when the wearer (2) is reclining or lying in a supine position in a Neonatal Intensive Care Unit (NICU), whereby the garment (1) can facilitate skin-to-skin care of the infant (3) in the NICU.

Now referring primarily to FIG. 8A through FIG. 14, the wearer (2) can wear the garment (1) in a garment second configuration (19), whereby the first and second support elements (10)(11) couple to one another about a shoulder (20) of the wearer (2). In the garment second configuration (19), the infant (3) can be received within the interior space (7) to dispose the infant (3) in a generally horizontal or diagonal position (21) in relation to the front torso portion (9) of the wearer (2) for skin-to-skin care of the infant (3). As an illustrative example, the garment second configuration (19) may be useful when the wearer (2) is reclining or lying in a supine position during a Cesarean section (C-section) procedure in an Operating Room (OR), whereby the garment (1) can be positioned to allow exposure of the abdomen (22) of the wearer (2) while facilitating skin-to-skin care of the infant (3) in the OR.

Now referring primarily to FIG. 1A through FIG. 16, the garment (1) can include a flexible panel (5) having a panel width (6) disposed between panel first and second ends (23)(24) configured to removably couple to one another to dispose the panel width (6) about a torso (4) of a wearer (2). A panel internal surface (25) and a front torso portion (9) of the wearer (2) can define an interior space (7) configured to receive an infant (3).

The panel (5) can have any of a numerous and wide variety of dimensional relations, including the panel width (6) and a panel length (26), which allow the panel (5) to be disposed about the torso (4) of the wearer (2) to define the interior space (7) which can receive the infant (3). As to particular embodiments, the panel (5) can have dimensional relations configured to be worn about the torso (4) of an extra-small, small, medium, large, extra-large, or any size post-partum female wearer (2). As to other particular embodiments, the panel (5) can have dimensional relations configured to be worn about the torso (4) of an extra-small, small, medium, large, extra-large, or any size male wearer (2).

Again referring primarily to FIG. 1A through FIG. 16, the panel first and second ends (23)(24) can removably couple to one another to dispose the panel width (6) about the torso (4) of the wearer (2). As to particular embodiments, a pair of releasably mateable fastener elements (27) can be releasably releasably mateable adherent fasteners, releasably mateable hook and loop fasteners, releasably mateable mechanical fasteners, or the like, or combinations thereof. As shown in the illustrative examples of the Figures, a particular embodiment of the garment (1) can have releasably releasable mating snap elements (30) disposed one each on a panel first end portion internal surface (31) and a panel second end portion external surface (32), whereby releasable mating of the pair of releasably releasable snap elements (30) can removably couple the panel first and
second ends (23/24) in overlapping engagement to secure the panel width (6) about the torso (4) of the wearer (2).

[0039] The removable coupling of the panel first and second ends (23/24) can allow relatively easy access to the torso (4) of the wearer (2), which may be useful for positioning the infant (3) in skin-to-skin contact with the front torso portion (9) of the wearer (2). Additionally, the removable coupling of the panel first and second ends (23/24) can allow relatively easy access to the infant (3) received within the interior space (7) between the panel internal surface (8) and the front torso portion (9) of the wearer (2). The relatively easy access to both the torso (4) of the wearer (2) and the infant (3) received within the interior space (7) may be useful under conditions requiring the placement of one or more medical devices on the torso (4) of the wearer (2), on the infant (3), or both, such as in the OR or the NICU.

[0040] Again referring primarily to FIG. 1A through FIG. 16, as to particular embodiments, a plurality of pairs of releasably mateable fastener elements (27) can be coupled to the panel first and second end portions (28/29) in spaced apart relation along corresponding panel first and second end portion lengths (33/34) to provide a corresponding plurality of fastenable areas (35) along the panel first and second end portion lengths (33/34). As shown in the illustrative examples of the Figures, three pairs of releasably mateable fastener elements (27) can be coupled along the panel first and second end portion lengths (33/34) in generally vertically spaced apart relation such that a first pair of releasably mateable snap elements (36) can be coupled one each proximate corresponding panel first and second end portion top portions (37/38), a second pair of releasably mateable snap elements (39) can be coupled one each proximate corresponding panel first and second end portion medial portions (40/41), and a third pair of releasably mateable snap elements (42) can be coupled one each proximate corresponding panel first and second end portion bottom portions (43/44). Accordingly, the panel first and second end portions (28/29) can be fastened together proximate panel first and second end portion top, medial, and bottom portions (37/38)(40/41/43/44). However, the invention need not be so limited, as any number of pairs of releasably mateable fastener elements (27) can be coupled to the panel first and second end portions (28/29) in any spaced apart relation along corresponding panel first and second end portion lengths (33/34) to provide a corresponding plurality of fastenable areas (35) along the panel first and second end portion lengths (33/34), depending upon the application.

[0041] The plurality of fastenable areas (35) along the panel first and second end portion lengths (33/34) can allow localized access to the torso (4) of the wearer (2), which may be useful for positioning the infant (3) in skin-to-skin contact with the front torso portion (9) of the wearer (2). Additionally, the plurality of fastenable areas (35) along the panel first and second end portion lengths (33/34) can allow localized access to the infant (3) received within the interior space (7) between the panel internal surface (8) and the front torso portion (9) of the wearer (2). The localized access to both the torso (4) of the wearer (2) and the infant (3) received within the interior space (7) may be useful under conditions requiring the placement of one or more medical devices on the torso (4) of the wearer (2), on the infant (3), or both, such as in the OR or the NICU.

[0042] As to particular embodiments, the pair of releasably mateable fastener elements (27) can be configured to provide adjustable removable coupling of the panel first and second ends (23/24) to adjust the panel width (6) which disposes about the torso (4) of the wearer (2).

[0043] As to particular embodiments, the pair of releasably mateable fastener elements (27) can be configured to mateably engage along any portion of the length of each releasably mateable fastener element (27). For example, the pair of releasably mateable fastener elements (27) can be configured as a pair of releasably mateable hook and loop fastener strips which can mateably engage along any portion of the length of each hook and loop fastener strip.

[0044] Again referring primarily to FIG. 1A through FIG. 16, as to particular embodiments, a plurality of pairs of releasably mateable fastener elements (27) can provide adjustable removable coupling of the panel first and second ends (23/24) to adjust the panel width (6) which disposes about the torso (4) of the wearer (2). As shown in the examples of the Figures, the pair of releasably mateable fastener elements (27) can be configured as a plurality of pairs of releasably mateable fastener elements (27) coupled to the panel first and second end portions (28/29) in generally horizontally spaced apart relation along a portion of the panel width (6) proximate the panel first and second end portions (28/29). To dispose a lesser panel width (6) about the torso (4) of the wearer (2), a pair a releasably mateable fastener elements (27) which dispose a lesser distance apart along the panel width (6) between the panel first and second end portions (28/29) can be matingly fastened, whereby a greater portion of the panel first and second end portions (28/29) overally engage along the panel width (6). Correspondingly, to dispose a greater panel width (6) about the torso (4) of the wearer (2), a pair a releasably mateable fastener elements (27) which dispose a greater distance apart along the panel width (3) between the panel first and second end portions (28/29) can be matingly fastened, whereby a lesser portion of the panel first and second end portions (28/29) overally engage along the panel width (6).

[0045] Again referring primarily to FIG. 1A through FIG. 16, as to particular embodiments, the panel (5) can have a resiliently stretchable panel top edge (45) configured to resiliently stretch about an upper torso portion (14) of the wearer (2). As an illustrative example, at least a portion of the panel top edge (45) can include a cinching element (47) configured to adjustably cinch the panel top edge (45) about the upper torso portion (14) of the wearer (2). Non-limiting examples of cinching elements (47) can include cinchable materials including or consisting of; elastic, shock cord, drawstring, or the like, or combinations thereof.

[0046] Again referring primarily to FIG. 1A through FIG. 16, as to particular embodiments, the panel (5) can have a resiliently stretchable panel bottom edge (48) configured to resiliently stretch about a lower torso portion (15) of the wearer (2). As an illustrative example, at least a portion of the panel bottom edge (48) can include a cinching element (47), as described above, configured to adjustably cinch the panel bottom edge (48) about the lower torso portion (15) of the wearer (2).

[0047] The garment (1) can further include a pair of first and second support elements (10/11) each coupled to the panel (5) proximate corresponding panel first and second side top portions (12/13). The first and second support elements (10/11) can be configured to couple to one another to support the panel (5) about the torso (4) of the wearer (2). As to particular embodiments, the first and second support ele-
ments (10)(11) can be configured to removably couple to one another to support the panel (5) about the torso (4) of the wearer (2).

[0048] As to particular embodiments, the first and second support elements (10)(11) can be configured as flexible first and second support elements (10)(11) having corresponding flexible first and second support element lengths (50)(51) disposed between corresponding first and second support element first ends (52)(53) and corresponding first and second support element second ends (54)(55). The first and second support element first ends (52)(53) can each couple to the panel (5) proximate corresponding panel first and second side top portions (12)(13), as to particular embodiments, the first and second support element first ends (52)(53) can be flexibly coupled to the corresponding panel first and second side top portions (12)(13), for example by sewing or stitching. The flexible first and second support elements (10)(11) can be configured to removably couple to one another along portions of corresponding flexible first and second support element lengths (50)(51) to support the panel (5) about the torso (4) of the wearer (2).

[0049] As to particular embodiments, the flexible first and second support elements (10)(11) can removably couple to one another proximate corresponding first and second support element second ends (54)(55). As an illustrative example, the first and second support element second ends (54)(55) can each have one of a pair of releasable mate thread fastener elements (27) which, upon mateable engagement, can removably couple the first and second support element second ends (54)(55) to one another.

[0050] As to other particular embodiments, the flexible first and second support elements (10)(11) can be configured to adjustably removably couple to one another along any portion of corresponding flexible first and second support element lengths (50)(51) distal from corresponding first and second support element first ends (52)(53). For example, the flexible first and second support elements (10)(11) can be configured as first and second straps (56)(57) which can adjustably removably couple to one another along any portion of corresponding first and second strap lengths (58)(59) distal from corresponding first and second strap first ends (60)(61) by tying. Accordingly, the coupled first and second strap length (62) between the first and second strap first ends (60)(61) can be adjustable. To achieve a lesser coupled first and second strap length (62) between the first and second strap first ends (60)(61), the first and second strap lengths (58)(59) can be tied together at lesser distances from the corresponding first and second strap first ends (60)(61). Correspondingly, to achieve a greater coupled first and second strap length (62) between the first and second strap first ends (60)(61), the first and second strap lengths (58)(59) can be tied together at greater distances from the corresponding first and second strap first ends (60)(61).

[0051] As to particular embodiments, the flexible first and second support elements (10)(11) can be configured as one continuous support element, whereby the first and second support element first ends (52)(53) can each couple to the panel (5) proximate corresponding panel first and second side top portions (12)(13) and the first and second support element second ends (54)(55) can be connected to one another to provide one continuous support element extending between the first and second support element first ends (52)(53). As to particular embodiments, the continuous support element can be formed from a resiliently stretchable material which can allow adjustment of a continuous support element length between the first and second support element first ends (52)(53).

[0052] Now referring primarily to FIG. 1A through FIG. 14, the first and second support elements (10)(11) can couple to one another about the upper torso portion (14) of the wearer (2) to support the panel (5) about the torso (4) of the wearer (2).

[0053] Now referring primarily to FIG. 1A through FIG. 7, as to particular embodiments, the first and second support elements (10)(11) can couple to one another about a neck (17) of the wearer (2). Correspondingly, the wearer (2) can wear the garment (1) in a garment first configuration (16), whereby the first and second support elements (10)(11) couple to one another about the neck (17) of the wearer (2). In the garment first configuration (16), the infant (3) can be received within the interior space (7) to dispose the infant (3) in a generally vertical position (18) in relation to the front torso portion (9) of the wearer (2) for skin-to-skin care of the infant (3). However, the invention need not be so limited, as the infant (3) can be disposed in any position when the garment (1) is worn in the garment first configuration (16) to facilitate skin-to-skin contact between the wearer (2) and the infant (3).

[0054] As an illustrative example, the garment first configuration (16) may be useful when the wearer (2) is reclining or lying in a supine position in the NICU, whereby the garment (1) can facilitate skin-to-skin care of the infant (3) in the NICU.

[0055] Now referring primarily to FIG. 8A through FIG. 14, as to particular embodiments, the first and second support elements (10)(11) can couple to one another about a shoulder (20) of the wearer (2). Correspondingly, the wearer (2) can wear the garment (1) in a garment second configuration (19), whereby the first and second support elements (10)(11) couple to one another about the shoulder (20) of the wearer (2). In the garment second configuration (19), the infant (3) can be received within the interior space (7) to dispose the infant (3) in a generally horizontal or diagonal position (21) in relation to the front torso portion (6) of the wearer (2) for skin-to-skin care of the infant (3). However, the invention need not be so limited, as the infant (3) can be disposed in any position when the garment (1) is worn in the garment second configuration (19) to facilitate skin-to-skin contact between the wearer (2) and the infant (3).

[0056] As an illustrative example, the garment second configuration (19) may be useful when the wearer (2) is reclining or lying in a supine position during a C-section procedure in the OR, whereby the garment (1) can be positioned to allow exposure of the abdomen (22) of the wearer (2) while facilitating skin-to-skin care of the infant (3) in the OR. The garment (1) can be positioned on the torso (4) of the wearer (2) such that the garment (1) remains above an operating curtain and, correspondingly, out of a sterile field, during and after the C-section procedure.

[0057] As to particular embodiments, the garment second configuration (19) can be worn such that the first and second support elements (10)(11) couple to one another about the right shoulder (63) of the wearer (2), for example when localized access via a right portion of the torso (4) of the wearer (2) may be useful. Alternately, the garment second configuration (19) can be worn such that the first and second support elements (10)(11) couple to one another about the left shoulder (64) of the wearer (2), for example when localized access via a left portion of the torso (4) of the wearer (2) may be useful.
As to particular embodiments, the first and second support element first ends (52)/(53) can removably couple to one another to facilitate disposing the panel width (6) about the torso (4) of the wearer (2). As to particular embodiments, a pair of releasably mateable fastener elements (27) can be coupled one each to first and second support element first end portions (69)/(70) to facilitate removable coupling of the first and second support element first ends (52)/(53), as described above for the one or more pairs of releasably mateable fastener elements (27) which can be coupled one each to panel first and second end portions (28)/(29) to facilitate removable coupling or adjustable removable coupling of the panel first and second ends (23)/(24).

As to particular embodiments, the first and second support elements (10)/(11) can further include a cushioning element which compressingly engages the wearer (2). As an illustrative example, a cushioning element can include a compressible element, such as batting, foam, rubber, film, fabric, or the like, or combinations thereof.

Now referring primarily to FIG. 1A through FIG. 1B, as to particular embodiments, one or more auxiliary elements (65) can be incorporated into the panel (5). As an illustrative example, the panel (5) can include a pair of slits (66), each of which communicates between the panel internal surface (8) and a panel external surface (67). The slit (66) can allow localized access to the torso (4) of the wearer (2), which may be useful under conditions requiring the placement of one or more devices on the torso (4) of the wearer (2). As an illustrative example, the slit (66) can allow localized access to the breast of a wearer (2) to facilitate the pumping of breast milk using breast pumps (68) while providing skin-to-skin care of the infant (3) (as shown in the example of FIG. 1B).

Additionally, the slit (66) can allow localized access to the infant (3) received within the interior space (7) between the panel internal surface (8) and the front torso portion (9) of the wearer (2). As to particular embodiments, each slit (66) can be fastener together by a pair of releasably mateable fastener elements (27), as described above, coupled one each to opposing portions of the panel (5) proximate the slit (66).

As to particular embodiments, one or more auxiliary elements can be coupled to the panel external surface (67). As an illustrative example, an auxiliary element can include material coupled to the panel external surface (67) to form a pouch, a pocket, or the like. Additionally, auxiliary elements can include buttons, bows, beads, appliques, or the like, or combinations thereof.

A method of making a convertible garment (1) for skin-to-skin care of an infant (3) can include providing a flexible panel (5) having a panel width (6) disposed between panel first and second ends (23)/(24) which removably couple to one another to dispose the panel width (6) about a torso (4) of a wearer (2) to define an interior space (7) between a panel internal surface (8) and a front torso portion (9) of the wearer (2), whereby the interior space (7) can be configured to receive an infant (3); coupling a first support element (10) to the panel (5) proximate a panel first side top portion (12); and coupling a second support element (11) to the panel (5) proximate a panel second side top portion (13); whereby the first and second support elements (10)/(11) can be configured to couple to one another about the panel (5) to the torso (4) of the wearer (2). In a garment first configuration (16), the first and second support elements (10)/(11) can be configured to couple to one another about a neck (17) of the wearer (2). In a garment second configuration (19), the first and second support elements (10)/(11) can be configured to couple to one another about a shoulder (20) of the wearer (2).

As to particular embodiments, the method of making the garment (1) can further include providing the panel (5) with a resiliently stretchable panel top edge (45) configured to resiliently stretch about an upper torso portion (14) of the wearer (2).

As to particular embodiments, the method of making the garment (1) can further include providing the panel (5) with a resiliently stretchable panel bottom edge (48) configured to resiliently stretch about a lower torso portion (15) of the wearer (2).

As to particular embodiments, the method of making the garment (1) can further include coupling a pair of releasably mateable fastener elements (27) one each to panel first and second end portions (28)/(29) to facilitate removable coupling of the panel first and second ends (23)/(24). As to particular embodiments, the method can further include coupling a plurality of pairs of releasably mateable fastener elements (27) to the panel first and second end portions (28)/(29) in spaced apart relation along corresponding panel first and second end portion lengths (33)/(34) to provide a corresponding plurality of fastenable areas (35) along the panel first and second end portion lengths (33)/(34).

As to particular embodiments, the method of making the garment (1) can further include configuring the pair of releasably mateable fastener elements (27) to provide adjustable removable coupling of the panel first and second ends (23)/(24). As to particular embodiments, the method can further include coupling a plurality of pairs of releasably mateable fastener elements (27) to the panel first and second end portions (28)/(29) in spaced apart relation along the panel width (6) to facilitate adjustment of the panel width (6) which disposes about the torso (4) of the wearer (2).

As to particular embodiments, the method of making the garment (1) can further include configuring the first and second support element first ends (10)/(11) as flexible first and second support elements having corresponding flexible first and second support element lengths (50)/(51) disposed between corresponding first and second support element first ends (52)/(53) and corresponding first and second support element second ends (54)/(55); coupling the first and second element first ends (52)/(53) each to the panel (5) proximate corresponding panel first and second side top portions (12)/(13); and configuring the flexible first and second support elements (10)/(11) to couple to one another along portions of corresponding flexible first and second support element lengths (50)/(51) to support the panel (5) about the torso (4) of the wearer (2).

As to particular embodiments, the method of making the garment (1) can further include configuring the flexible first and second support elements (10)/(11) as flexible first and second strips (56)/(57) which adjustably couple to one another along any portion of corresponding first and second strap lengths (58)/(59) distal from corresponding first and second strap first ends (52)/(53) by tying.

As to particular embodiments, the method of making the garment (1) can further include disposing at least one slit (66) in the panel (5), whereby the slit (66) communicates between the panel internal surface (8) and a panel external surface (67).

As to particular embodiments, the panel (5) can be formed from any flexible material sufficient to be worn about a wearer (2) and disposed about an infant (3). The panel (5)
can be entirely formed of the same material, or alternatively, various portions of the panel (5) can be formed from different materials. By way of non-limiting example, the material can be soft, breathable, moisture-wicking, anti-bacterial, natural, synthetic, odor-resistant, or machine washable and can include or consist of cotton, linen, polyester, leather, suede, vinyl, Lycra, Spandex, wool, rayon, viscose, or the like, or combinations thereof. As to particular embodiments, the material can be a stretchable fabric.

[0071] As to particular embodiments, the flexible first and second support elements (10)/(11) can be formed from any flexible material sufficient to be worn about a wearer (2) to support the panel (5) about a torso (4) of the wearer (2). The flexible first and second support elements (10)/(11) can be entirely formed of the same material, or alternatively, various portions of the flexible first and second support elements (10)/(11) can be formed from different materials. By way of non-limiting example, the material can be soft, breathable, moisture-wicking, anti-bacterial, natural, synthetic, odor-resistant, or machine washable and can include or consist of cotton, linen, polyester, leather, suede, vinyl, Lycra, Spandex, wool, rayon, viscose, or the like, or combinations thereof. As to particular embodiments, the material can be a stretchable fabric.

[0072] As to particular embodiments, the panel (5) and the flexible first and second support elements (10)/(11) can be formed from the same material or a substantially similar material.

[0073] As to particular embodiments, the first and second support elements (10)/(11) can be fixedly coupled to the corresponding panel first and second side top portions (12)/(13) by an adherent layer. As used herein, the term “adherent layer” broadly encompasses at least one, one or more, or a combination of a wide variety of adhesives or mechanical fasteners. While the illustrative example of the adherent layer shown in the Figures depicts a mechanical fastener configured as stitching, embodiments can have any suitable adherent layer sufficient to fixedly couple the first and second support elements (10)/(11) to the corresponding panel first and second side top portions (12)/(13).

[0074] Exemplary adhesives include, as illustrative examples: non-reactive adhesives including drying adhesives, pressure-sensitive adhesives, contact adhesives, and hot adhesives; reactive adhesives including one-part adhesives and multi-part adhesives; natural adhesives; synthetic adhesives; or the like, or combinations thereof. Exemplary mechanical fasteners include, as illustrative examples: annular elements, buckles, buttons, clamps, clips, grommets, hook-and-eye closures, molded hook and loop fasteners, pins, rivets, snap fasteners, staples, stitches, straps, tape, zippers, or the like, or combinations thereof.

[0075] As to other particular embodiments, the first and second support elements (10)/(11) and the panel (5) can be formed as a one-piece garment (1).

[0076] As to particular embodiments, elements of the garment (1) can be produced from any of a wide variety of processes depending upon the application, such as fabrication, as one piece or assembled from a plurality of pieces into an embodiment of the garment (1) or provided as a plurality of pieces for assembly into an embodiment of the garment (1).

[0077] A method of using a convertible garment (1) for skin-to-skin care of an infant (3) can include obtaining the garment (1) comprising a flexible panel (5) having a panel width (6) disposed between panel first and second ends (23) (24); a first support element (10) coupled to the panel (5) proximate a panel first side top portion (12); and a second support element (11) coupled to the panel (5) proximate a panel second side top portion (13). The method can further include removably coupling the panel first and second ends (23)/(24) to one another to dispose the panel width (6) about a torso (4) of a wearer (2) to define an interior space (7) between a panel internal surface (8) and a front torso portion (9) of the wearer (2), whereby the interior space (7) can be configured to receive an infant (3). The method can further include coupling the first and second support elements (10)/(11) to one another to support the panel (5) about the torso (4) of the wearer (2).

[0078] As to particular embodiments, the method can further include inserting the infant (3) into the interior space (7) to engage the infant (3) with the front torso portion (9) of the wearer (2). As to particular embodiments, engaging the infant (3) with the front torso portion (9) of the wearer (2) can provide skin-to-skin care of the infant (3).

[0079] As to particular embodiments, the method can further include coupling the first and second support elements (10)/(11) to one another about a neck (17) of the wearer (2) to configure the garment (1) in a garment first configuration (16). The method can further include inserting the infant (3) into the interior space (7) to dispose the infant (3) in a generally vertical position (18) in relation to the front torso portion (9) of the wearer (2) for skin-to-skin care of the infant (3).

[0080] As to particular embodiments, the method can further include coupling the first and second support elements (10)/(11) to one another about a shoulder (20) of the wearer (2) to configure the garment (1) in a garment second configuration (19). The method can further include inserting the infant (3) into the interior space (7) to dispose the infant (3) in a generally horizontal or diagonal position (21) in relation to the front torso portion (9) of the wearer (2) for skin-to-skin care of the infant (3).

[0081] As to particular embodiments, the method can further include disposing a breast pump (68) through a slit (66) which communicates between the panel internal surface (8) and a panel external surface (67) to engage the breast pump (68) with a breast of the wearer (2).

[0082] As can be easily understood from the foregoing, the basic concepts of the present invention may be embodied in a variety of ways. The invention involves numerous and varied embodiments of a garment and methods for making and using such garments including the best mode.

[0083] As such, the particular embodiments or elements of the invention disclosed by the description or shown in the figures or tables accompanying this application are not intended to be limiting, but rather exemplary of the numerous and varied embodiments generically encompassed by the invention or equivalents encompassed with respect to any particular element thereof. In addition, the specific description of a single embodiment or element of the invention may not explicitly describe all embodiments or elements possible; many alternatives are implicitly disclosed by the description and figures.

[0084] It should be understood that each element of an apparatus or each step of a method may be described by an apparatus term or method term. Such terms can be substituted where desired to make explicit the implicitly broad coverage to which this invention is entitled. As but one example, it should be understood that all steps of a method may be disclosed as an action, a means for taking that action, or as an
element which causes that action. Similarly, each element of an apparatus may be disclosed as the physical element or the action which that physical element facilitates. As but one example, the disclosure of a “support” should be understood to encompass disclosure of the act of “supporting”—whether explicitly discussed or not—and, conversely, were there effectively disclosure of the act of “supporting”, such a disclosure should be understood to encompass disclosure of a “support” and even a “means for supporting.” Such alternative terms for each element or step are to be understood to be explicitly included in the description.

[0085] In addition, as to each term used it should be understood that unless its utilization in this application is inconsistent with such interpretation, common dictionary definitions should be understood to be included in the description for each term contained in the Random House Webster’s Unabridged Dictionary, second edition, each definition hereby incorporated by reference.

[0086] All numeric values herein are assumed to be modified by the term “about”, whether or not explicitly indicated. For the purposes of the present invention, ranges may be expressed as from “about” one particular value to “about” another particular value. When such a range is expressed, another embodiment includes from the one particular value to the other particular value. The recitation of numerical ranges by endpoints includes all the numeric values subsumed within that range. A numerical range of one to five includes for example the numeric values 1, 1.5, 2, 2.75, 3, 3.80, 4, 5, and so forth. It will be further understood that the endpoints of each of the ranges are significant both in relation to the other endpoints, and independently of the other endpoint. When a value is expressed as an approximation by use of the antecedent “about,” it will be understood that the particular value forms another embodiment. The term “about” generally refers to a range of numeric values that one of skill in the art would consider equivalent to the recited numeric value or having the same function or result. Similarly, the antecedent “substantially” means largely, but not wholly, the same form, manner or degree and the particular element will have a range of configurations as a person of ordinary skill in the art would consider as having the same function or result. When a particular element is expressed as an approximation by use of the antecedent “substantially,” it will be understood that the particular element forms another embodiment.

[0087] Moreover, for the purposes of the present invention, the term “a” or “an” entity refers to one or more of that entity unless otherwise limited. As such, the terms “a” or “an”, “one or more” and “at least one” can be used interchangeably herein.

[0088] Thus, the applicant(s) should be understood to claim at least: i) each of the garments herein disclosed and described, ii) the related methods disclosed and described, iii) similar, equivalent, and even implicit variations of each of these devices and methods, iv) those alternative embodiments which accomplish each of the functions shown, disclosed, or described, v) those alternative designs and methods which accomplish each of the functions shown as are implicit to accomplish that which is disclosed and described, vi) each feature, component, and step shown as separate and independent inventions, vii) the applications enhanced by the various systems or components disclosed, viii) the resulting products produced by such systems or components, ix) methods and apparatuses substantially as described heretofore and with reference to any of the accompanying examples, x) the various combinations and permutations of each of the previous elements disclosed.

[0089] The background section of this patent application provides a statement of the field of endeavor to which the invention pertains. This section may also incorporate or contain paraphrasing of certain United States patents, patent applications, publications, or subject matter of the claimed invention useful in relating information, problems, or concerns about the state of technology to which the invention is drawn toward. It is not intended that any United States patent, patent application, publication, statement or other information cited or incorporated herein be interpreted, construed or deemed to be admitted as prior art with respect to the invention.

[0090] The claims set forth in this specification, if any, are hereby incorporated by reference as part of this description of the invention, and the applicant expressly reserves the right to use all of or a portion of such incorporated content of such claims as additional description to support any or all of the claims or any element or component thereof, and the applicant further expressly reserves the right to move any portion of or all of the incorporated content of such claims or any element or component thereof from the description into the claims or vice-versa as necessary to define the matter for which protection is sought by this application or by any subsequent application or continuation, division, or continuation-in-part application thereof, or to obtain any benefit of, reduction in fees pursuant to, or to comply with the patent laws, rules, or regulations of any country or treaty, and such content incorporated by reference shall survive during the entire pendency of this application including any subsequent continuation, division, or continuation-in-part application thereof or any reissue or extension thereon.

[0091] Additionally, the claims set forth in this specification, if any, are further intended to describe the metes and bounds of a limited number of the preferred embodiments of the invention and are not to be construed as the broadest embodiment of the invention or a complete listing of embodiments of the invention that may be claimed. The applicant does not waive any right to develop further claims based upon the description set forth above as a part of any continuation, division, or continuation-in-part, or similar application.

1. A convertible garment for skin-to-skin care of an infant, said garment comprising:

   a) a flexible panel having a panel width disposed between a panel first and second ends which removably couple to one another to dispose said panel width about a torso of a wearer to define an interior space between a panel internal surface and a front torso portion of said wearer, said interior space configured to receive an infant;
   b) a first support element coupled to said panel proximate a panel first side top portion; and
   c) a second support element coupled to said panel proximate a panel second side top portion;
   d) said first and second support elements configured to couple to one another to support said panel about said torso of said wearer;
   e) wherein in a garment first configuration, said first and second support elements couple to one another about a neck of said wearer;
   f) wherein in a garment second configuration, said first and second support elements couple to one another about a shoulder of said wearer.
2. The garment of claim 1, said panel further comprising a resiliently stretchable panel top edge configured to resiliently stretch about an upper torso portion of said wearer.

3. The garment of claim 1, said panel further comprising a resiliently stretchable panel bottom edge configured to resiliently stretch about a lower torso portion of said wearer.

4. The garment of claim 1, further comprising a pair of releasably mountable fastener elements coupled one each to panel first and second end portions to facilitate removable coupling of said panel first and second ends.

5. The garment of claim 4, further comprising a plurality of said pairs of releasably mountable fastener elements coupled to said panel first and second end portions in spaced apart relation along corresponding panel first and second end portion lengths to provide a corresponding plurality of fastenable areas along said panel first and second end portion lengths.

6. The garment of claim 4, wherein said pair of releasably mountable fastener elements is configured to provide adjustable removable coupling of said panel first and second ends.

7. The garment of claim 6, further comprising a plurality of said pairs of releasably mountable fastener elements coupled to said panel first and second end portions in spaced apart relation along said panel width to facilitate adjustment of said panel width which disposed about said torso of said wearer.

8. The garment of claim 4, wherein said first and second support elements are configured as flexible first and second support elements having corresponding flexible first and second support lengths disposed between corresponding first and second support element first ends and corresponding first and second support element second ends; wherein said first and second element first ends each couple to said panel proximate corresponding said panel first and second side top portions; wherein said flexible first and second support elements are configured to removably couple to one another along portions of corresponding said flexible first and second support element lengths to support said panel about said torso of said wearer.

9. The garment of claim 8, wherein said flexible first and second support elements are configured as first and second straps which adjustably removably couple to one another along any portion of corresponding first and second strap lengths distal from corresponding first and second strap first ends by tying.

10. The garment of claim 4, further comprising at least one slit which communicates between said panel internal surface and a panel external surface.

11. A method of making a convertible garment for skin-to-skin care of an infant, said method comprising: providing a flexible panel having a panel width disposed between panel first and second ends which removably couple to one another to dispose said panel width about a torso of a wearer to define an interior space between a panel internal surface and a front torso portion of said wearer, said interior space configured to receive an infant; coupling a first support element to said panel proximate a panel first side top portion; and coupling a second support element to said panel proximate a panel second side top portion; said first and second support elements configured to couple to one another to support said panel about said torso of said wearer.

12. The method of claim 11, further comprising providing said panel with a resiliently stretchable panel top edge configured to resiliently stretch about an upper torso portion of said wearer.

13. The method of claim 11, further comprising providing said panel with a resiliently stretchable panel bottom edge configured to resiliently stretch about a lower torso portion of said wearer.

14. The method of claim 11, further comprising coupling a pair of releasably mountable fastener elements one each to panel first and second end portions to facilitate removable coupling of said panel first and second ends.

15. The method of claim 14, further comprising coupling a plurality of said pairs of releasably mountable fastener elements to said panel first and second end portions in spaced apart relation along corresponding panel first and second end portion lengths to provide a corresponding plurality of fastenable areas along said panel first and second end portion lengths.

16. The method of claim 14, further comprising configuring said pair of releasably mountable fastener elements to provide adjustable removable coupling of said panel first and second ends.

17. The method of claim 16, further comprising coupling a plurality of said pairs of releasably mountable fastener elements to said panel first and second end portions in spaced apart relation along said panel width to facilitate adjustment of said panel width which disposed about said torso of said wearer.

18. The method of claim 14, further comprising: configuring said first and second support elements as flexible first and second support elements having corresponding flexible first and second support element lengths disposed between corresponding first and second support element first ends and corresponding first and second support element second ends; coupling said first and second element first ends each to said panel proximate corresponding said panel first and second side top portions; and configuring said flexible first and second support elements to removably couple to one another along portions of corresponding said flexible first and second support element lengths to support said panel about said torso of said wearer.

19. The method of claim 18, further comprising configuring said flexible first and second support elements as first and second straps which adjustably removably couple to one another along any portion of corresponding first and second strap lengths distal from corresponding first and second strap first ends by tying.

20. The method of claim 14, further comprising disposing at least one slit in said panel, said slit communicating between said panel internal surface and a panel external surface.

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